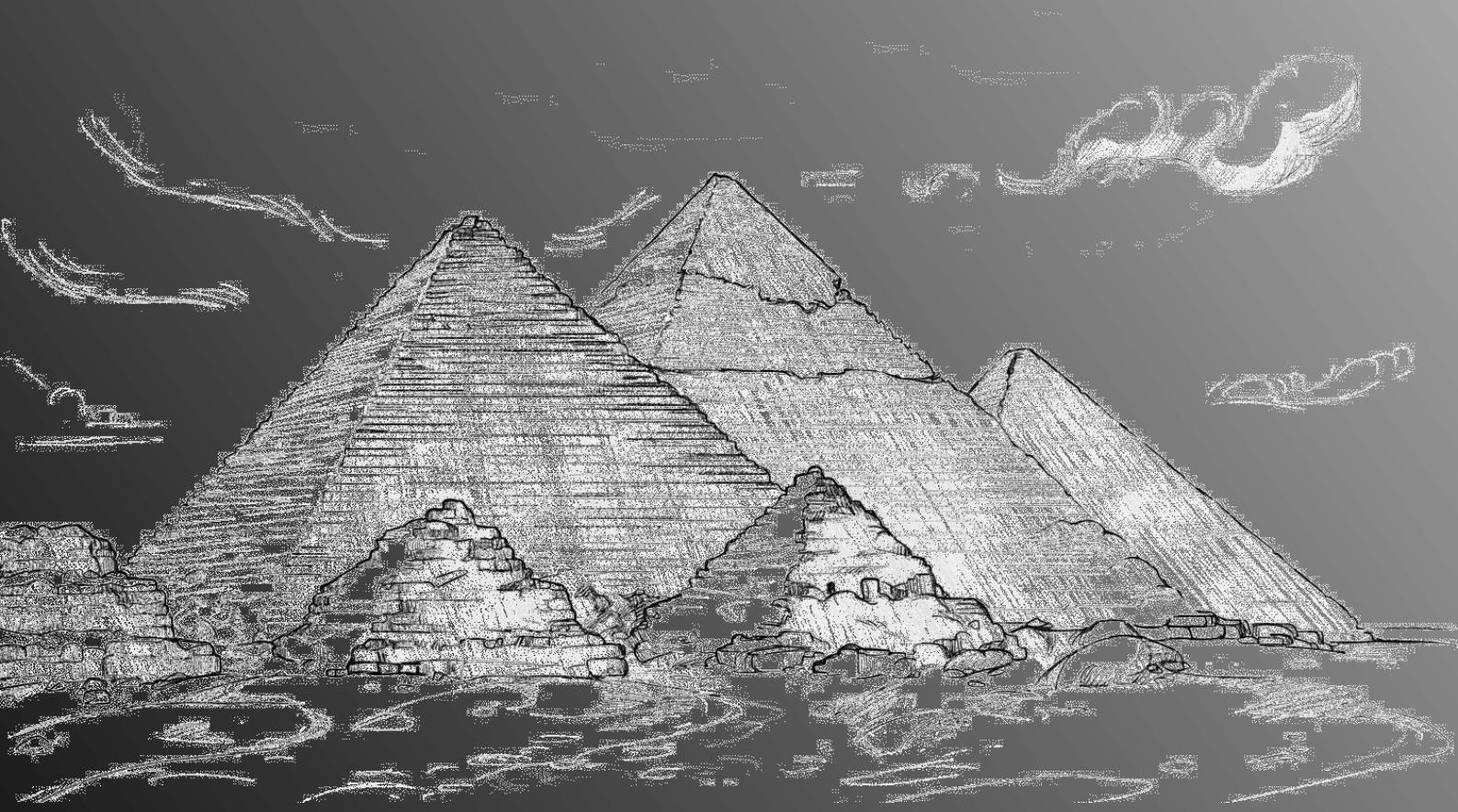
PROCEEDINGS BOOK

5th INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES



February 2-5, 2022
Cairo, Egypt

Editors

Dr. Sheeba Sardar Ali
Samira KHADHRAOUI ONTUNC

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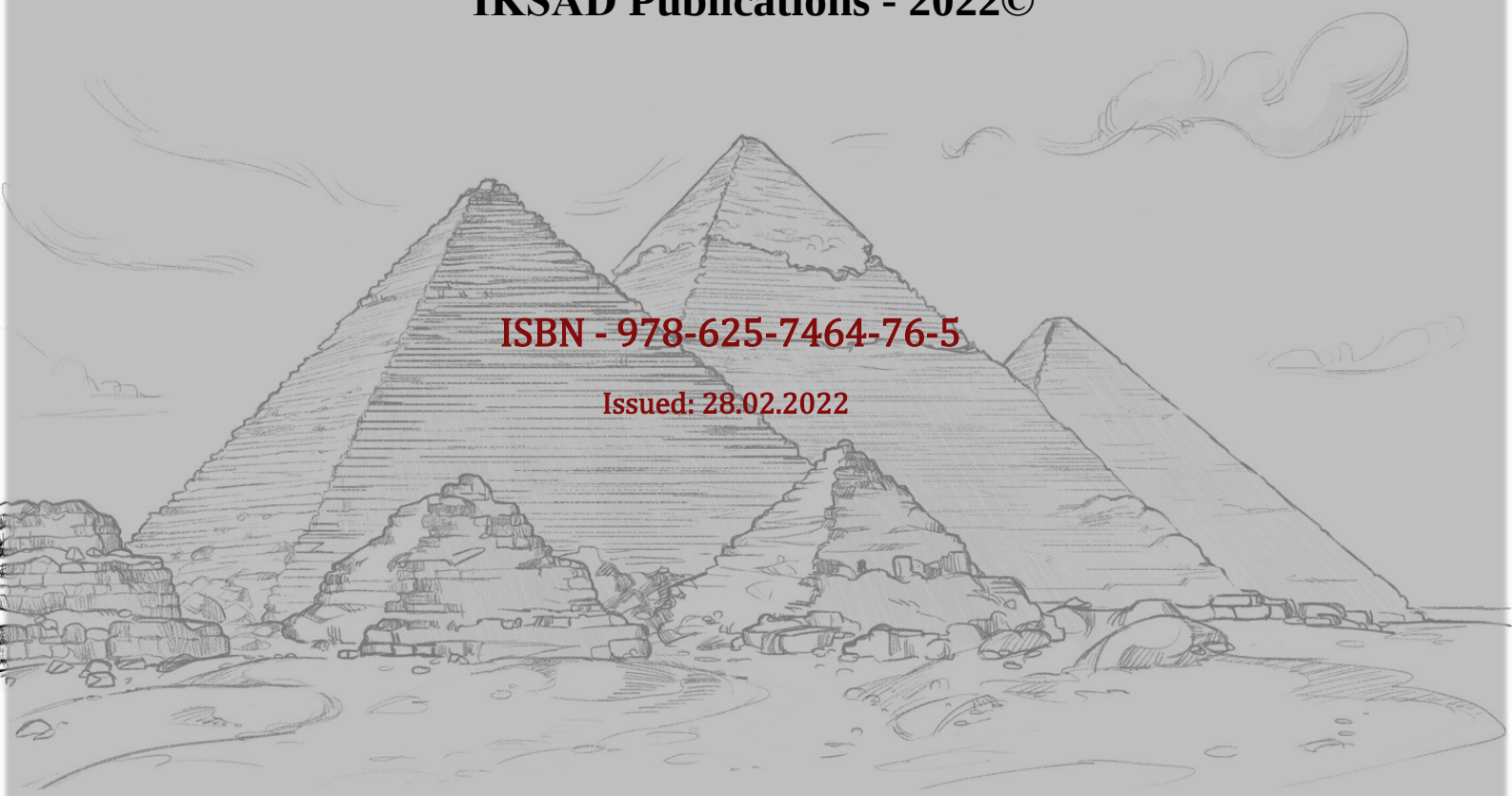

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Issued: 28.02.2022

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INSTITUTE OF ECONOMICS DEVELOPMENT AND SPCAIL RESEARCHES (IKSAD)

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Turkish, English, French, Arabic



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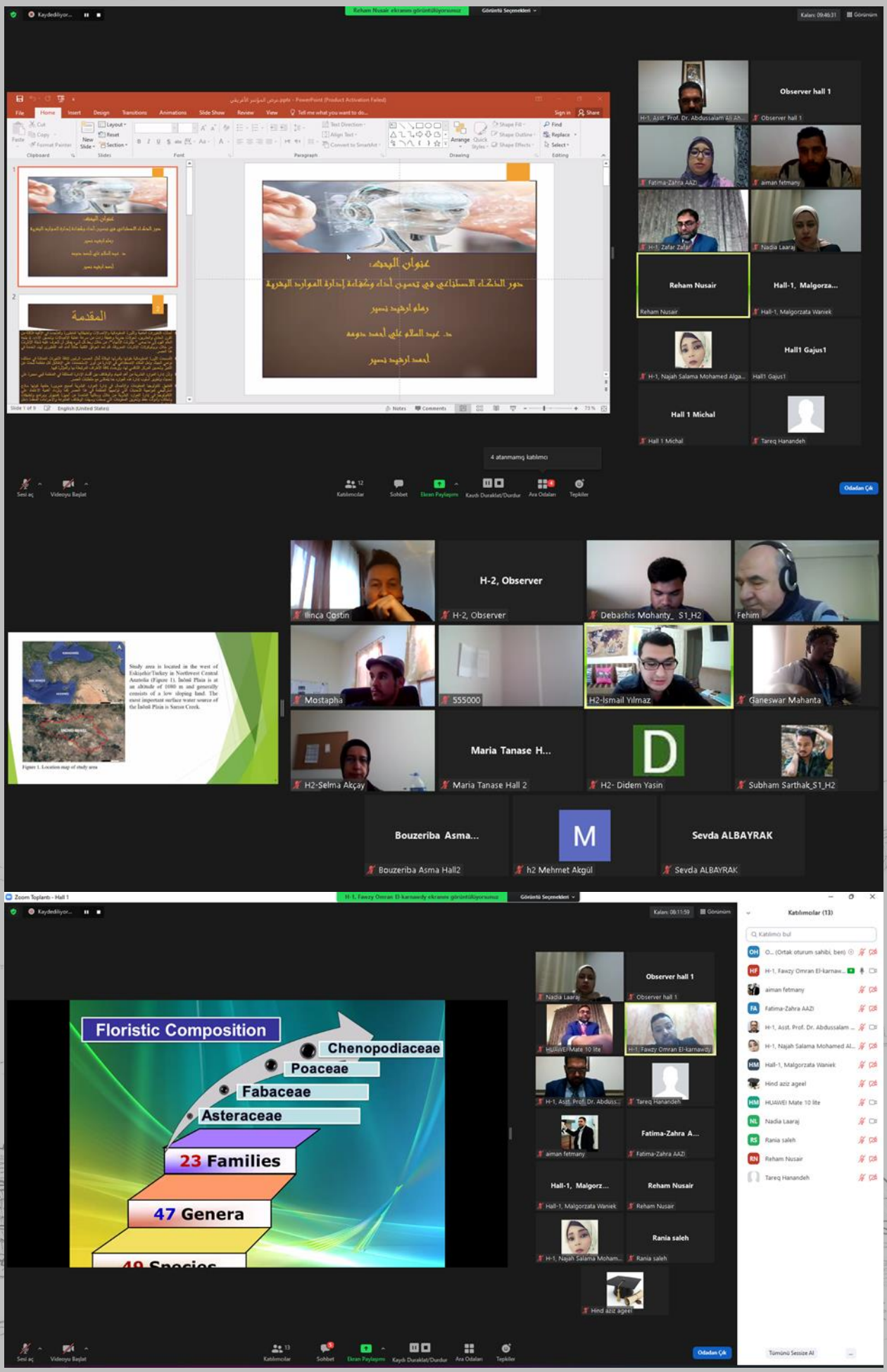

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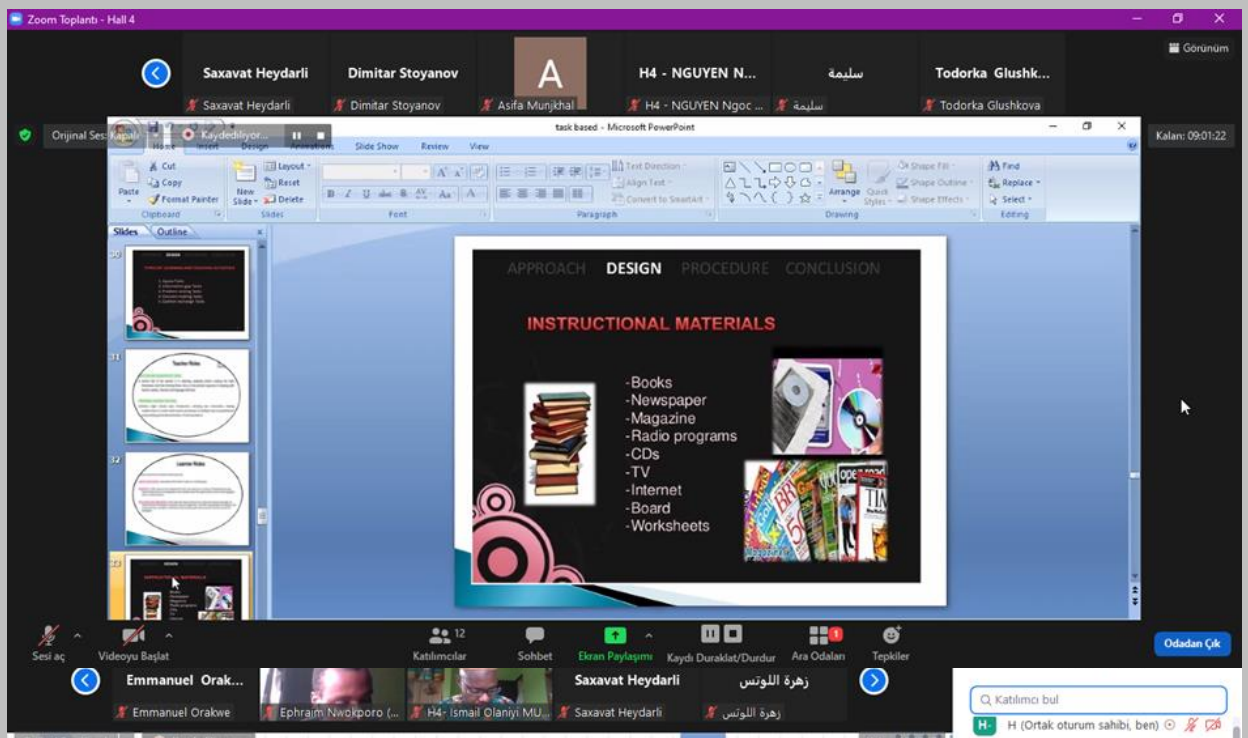

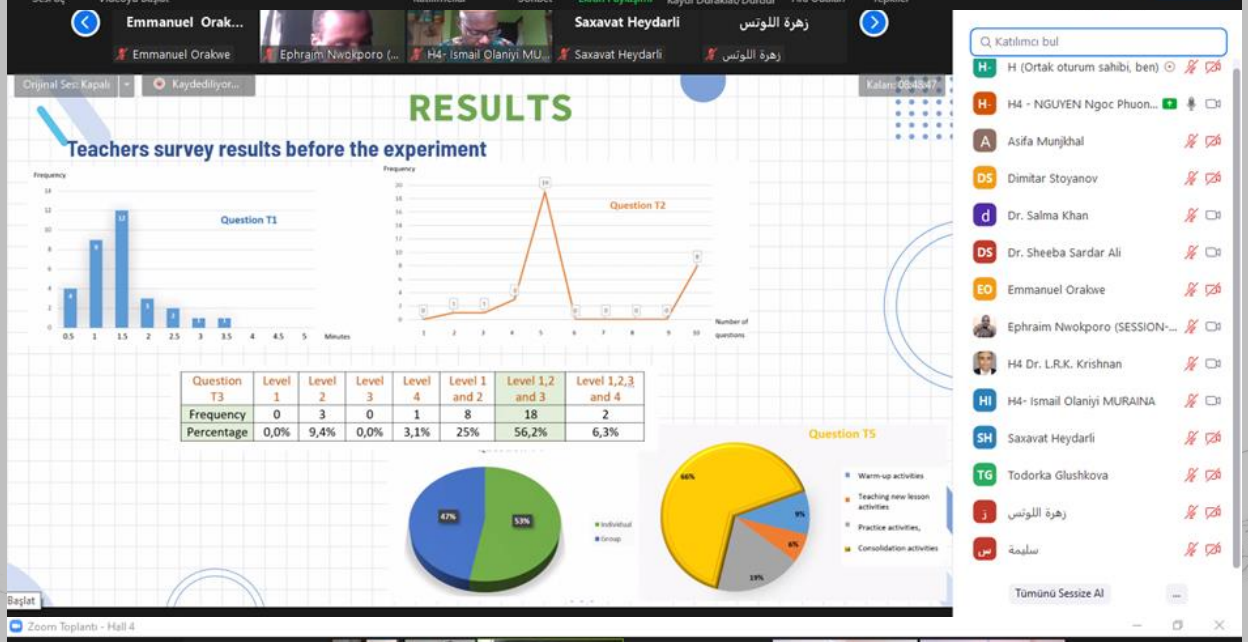

Question T3	Level 1	Level 2	Level 3	Level 4	Level 1 and 2	Level 1,2 and 3	Level 1,2,3 and 4
Frequency	0	3	0	1	8	18	2
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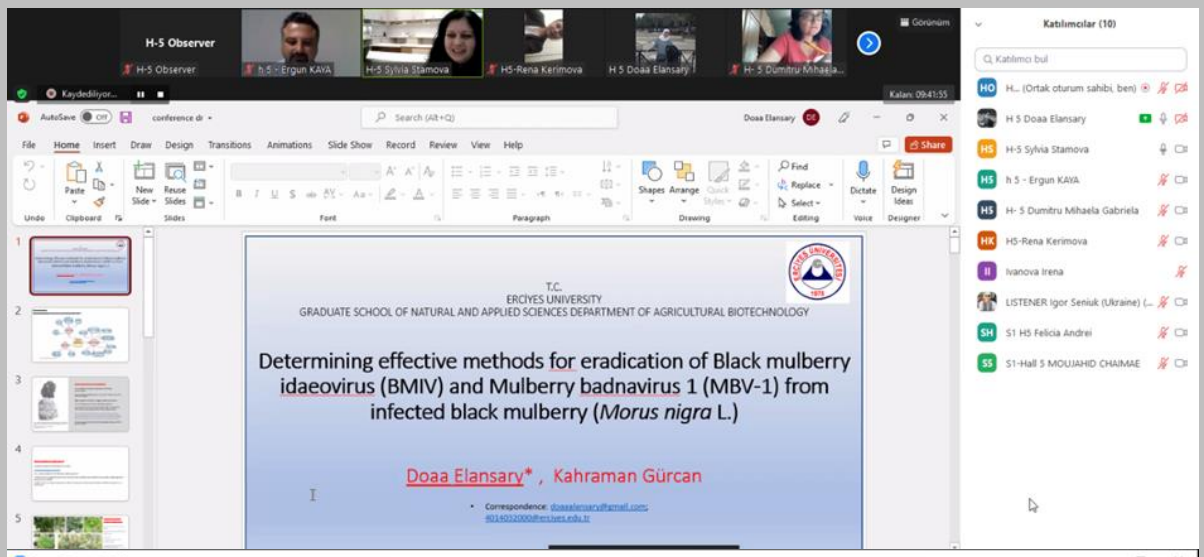

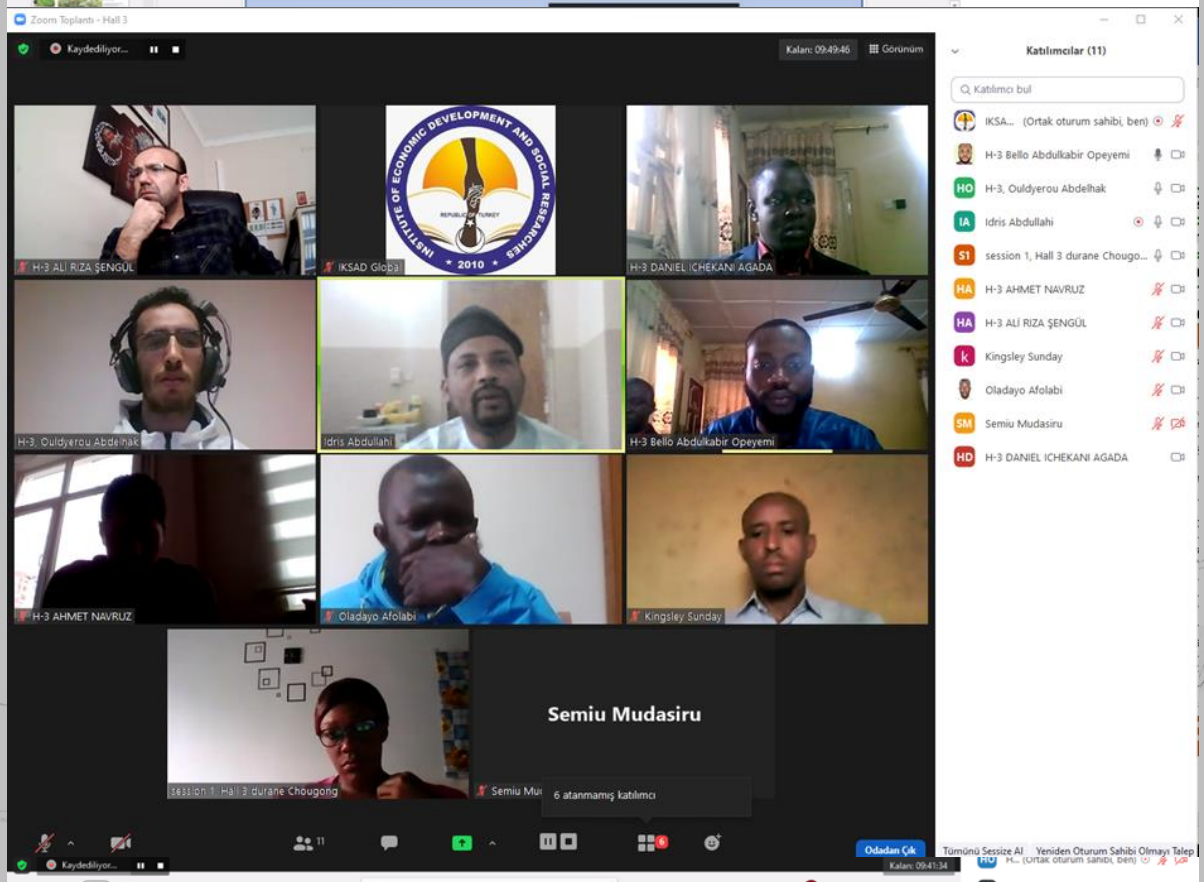

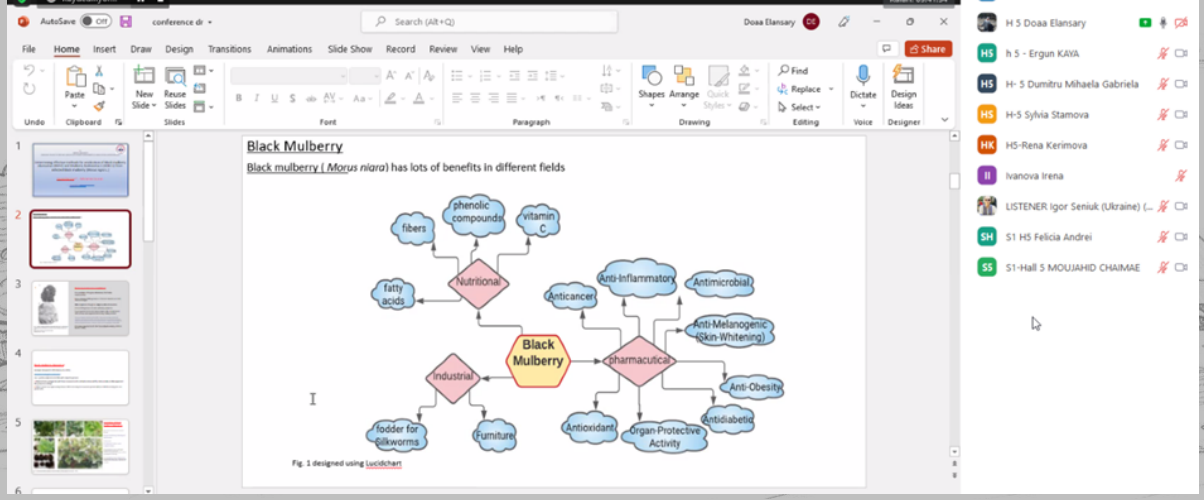

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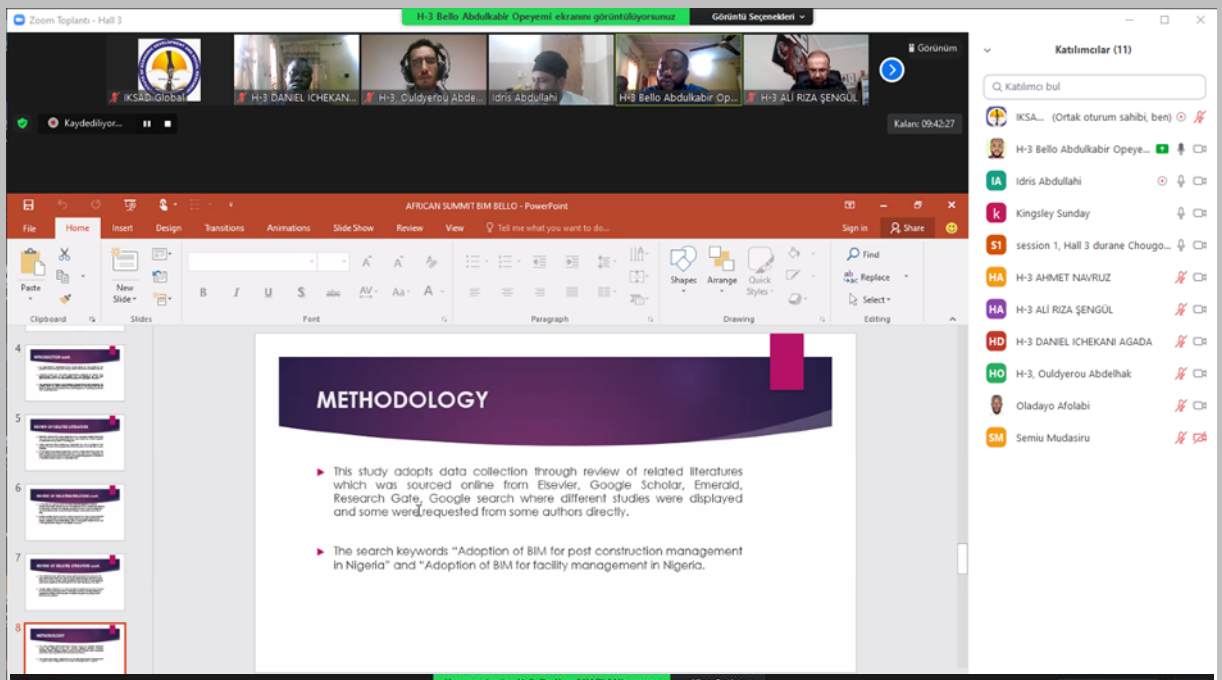

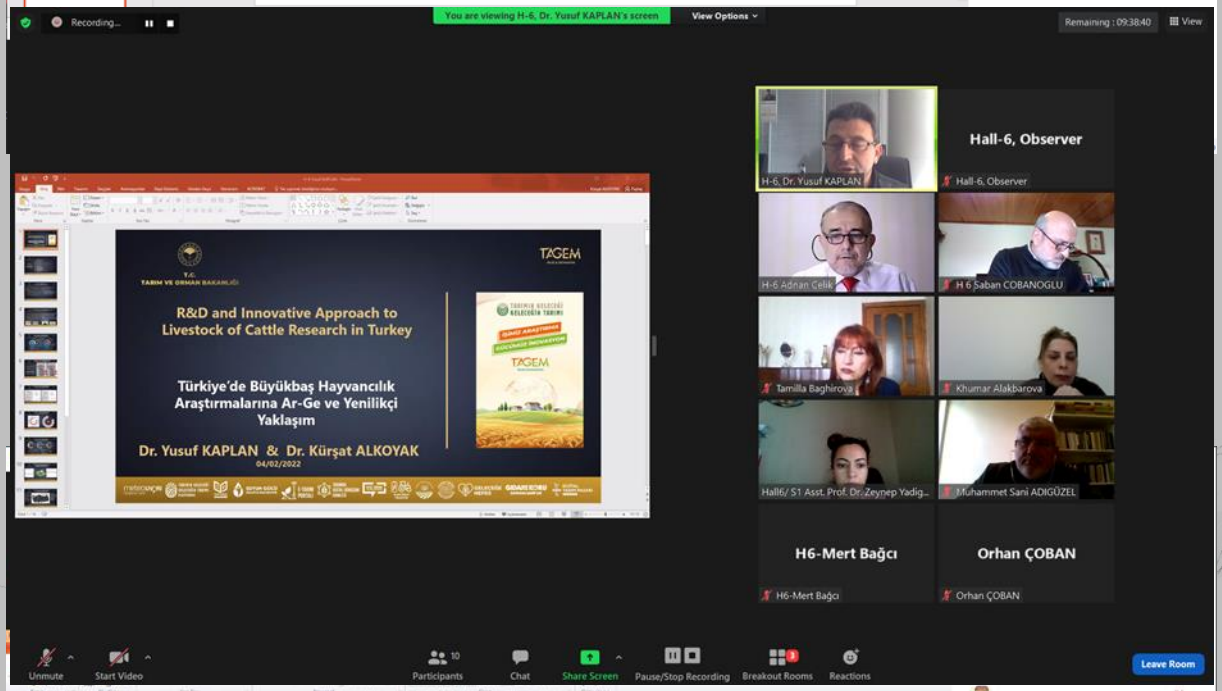

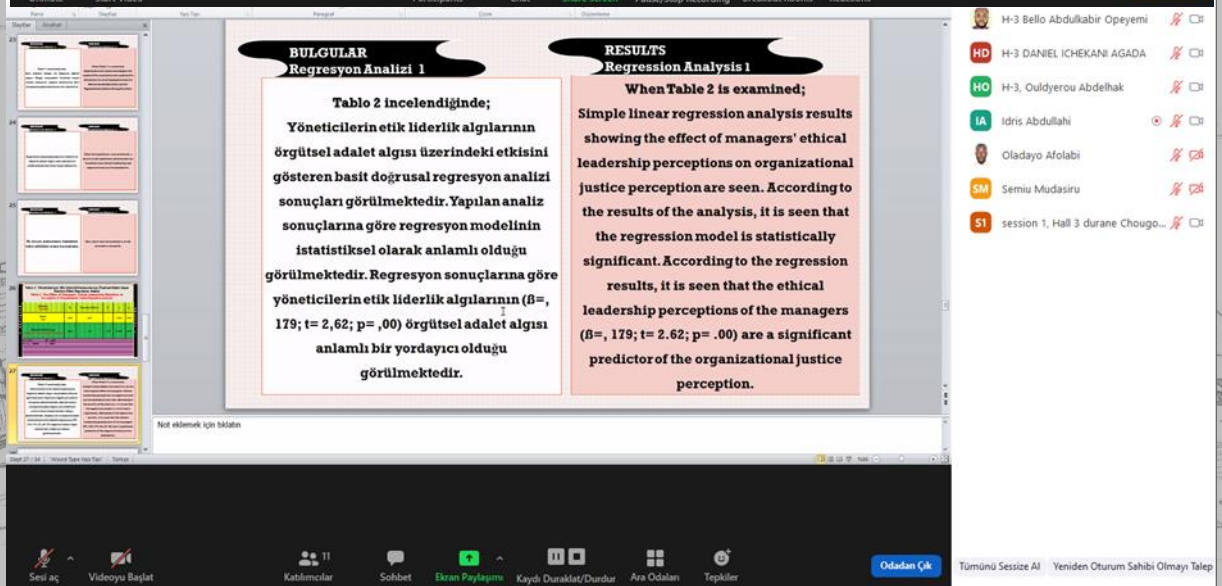

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5th International

AFRICAN CONFERENCE

On Current Studies of Science, Technology & Social Sciences

CONFERENCE PROGRAM

February 2-5, 2022
Cairo, Egypt

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04.02.2022 | SESSION-1 | HALL-1

Cairo Local Time: 09:^{00}–11:^{30}

Ankara Local Time: 10:^{00}–12:^{30}

MODERATOR: Asst. Prof. Dr. Abdussalam Ali Ahmed

Authors	Affiliation	Presentation title
Rania Saleh Mohammed **Abdussalam Ali Ahmed**	*College Of Electronic Technology, BaniWalid, Libya* *Bani Waleed University, Bani Waleed, Libya*	Iris Recognition Technology: Principles, Mechanism, and Market Forecasting (2022-2030)
Reham Ershaid Nusair **Abdussalam Ali Ahmed**	*University Science Islam, Malaysia* *Bani Waleed University, Bani Waleed, Libya*	The Role of Artificial Intelligence in Improving the Performance and Efficiency of Human Resource Management
Zafar Iqbal Zafar **Dr. Abdul Waheed**	*NUST, Islamabad, Pakistan*	The Development of Private Housing Schemes to Address the Housing Problem:A Case Study of Islamabad
Nadia LAARAJ **Fatima-Zahra AAZI**	*University Mohammed V, Morocco* *University Hassan II, Morocco*	Gender diffrences in IT entrepreneurship : comparing entrepreneurial intention/ behavior of women and men Evidence from Morocco
Małgorzata Waniek **Rui Alexandre Castanho**	*WSB University, Dąbrowa Górnicza, Poland* *University of Johannesburg, South Africa*	European Union Funding during a coronavirus pandemic
Res. TARIQ SAMIH HANANDEH **Assoc. prof. Dr. Abdullah mohammad Ayedh**	*University Science Islam, Malaysia*	The impact of the tax government on reducing tax evasion in Jordan
Ahmad ERSHAID SAMI NUSAIR **Dr. Nur Hidayah Laili** **Reham Ershaid Nusair**	*University Science Islam, Malaysia*	The Role of Applying Governance Principles in Reducing Financial and Administrative Corruption in Jordan
Ayman Fathullah Almabrouk Alfirjan	*Bani Waleed University, Bani Waleed, Libya*	THE EFFECT OF REPLACING THE POWDERED MIXTURE OF LIMESTONE AND BRICK ON THE MECHANICALPROPERTIES OF THE CONCRETE
Fawzy Omran Mohammed El-karnawdy **Abdullah Farag Mohamed Abogmiza** **Hajer Mohammed Makhzoum Alsouyid** **Khalifa Ahmed Khalifa Ajaj**	*Al-Asmarya Islamic University, Libya*	Floristic Composition of Zygophyllum coccineum L. associates in Zliten Coast, Libya
Najah salama Mohamed Algamodi	*Bani Waleed University, Bani Waleed, Libya*	Society's view of divorced women The rights of women and their children in Libyan law and the consequences of cases of separation or the termination of the marital relationship

(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.

04.02.2022 | SESSION-1 | HALL-2

Cairo Local Time: 09:^{00}–11:^{30}

Ankara Local Time: 10:^{00}–12:^{30}

MODERATOR: Prof. Dr. Fehim Findik

Authors	Affiliation	Presentation title
Prof. Dr. Fehim Findik	*Sakarya Applied Sciences University, Sakarya, Turkey*	History of Powder Metallurgy
Selma Akçay	*Cankiri Karatekin University, Turkey*	ANALYSIS OF HEAT TRANSFER IN DIFFERENT CORRUGATED CHANNELS WITH BAFFLES
Ilincă Costin **Tănase Maria**	*Petroleum-Gas University of Ploiesti, Romania*	ANALYSIS OF STRESS STATE IN THE CASE OF STRUCTURAL TYPE ELEMENTS RELATED TO THE FIXED DOME TANK ROOF
İsmail Yılmaz **Didem Yasin**	*Eskisehir Osmangazi University, Turkey*	IDENTIFICATION OF GROUNDWATER POTENTIAL AREA USING REMOTE SENSING AND GIS TECHNIQUE: AN EXAMPLE FOR ESKISEHIR/İNÖNÜ PLAIN
Ammar Alazzawi **Doç. Dr. Öznur Büyükturan** **Dr. Öğr. Üyesi Buket Büyükturan** **Arş. Gör. Mehmet Hanifi Kaya** **Uzm. Fzt. Mehmet Canlı**	*Kırşehir Ahi Evran University, Turkey*	GAIT ASYMMETRIES IN ADOLESCENT IDIOPATHIC SCOLIOSIS
Bouzeriba Asma	*Tissemsilt University, Algeria*	ELASTIC ANALYSIS OF FUNCTIONALLY GRADED CYLINDERS SUBJECTED TO MECHANICAL LOADING
M. Karaoui **M. Alami** **M. Assouag**	*University Moulay Ismail, Morocco*	Synthesis and anticorrosive properties of a new epoxy polymer for carbon steel E24 in HCl 1 M.
Rodolfo Reda **Alessio Zanza** **Maurilio D'Angelo** **Dario Di Nardo** **Luca Testarelli**	*Sapienza University of Rome, Italy*	Ultrasound Imaging in Dentistry, What's New?
D.Mohanty **G.Mohanta** **S.Shaw**	*C.V.Raman Global University, India* *Botswana International University, Botswana*	EFFECT OF SOLAR THERMAL RADIATION AND MAGNETIC FIELD ON THE FLOW OF CASSON FLUID
Canser Gül **Sevda Albayrak** **Hülya Durmuş**	*Manisa Celal Bayar University, Turkey* *Gazi University, Turkey*	MOLYBDENE OXIDIZED LAYERS COATING OF WE43 MAGNESIUM ALLOY WITH RF SPUTTER METHOD
Canser Gül **Sevda Albayrak** **Hülya Durmuş**	*Manisa Celal Bayar University, Turkey* *Gazi University, Turkey*	THE EFFECT OF SURFACE ROUGHNES VALUES ON MOLYBDENE OXIDIZED LAYERS COATING OF WE43 MAGNESIUM ALLOY WITH RF SPUTTER METHOD

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04.02.2022 | SESSION-1 | HALL-3

Cairo Local Time: 09:^{00}–11:^{30}

Ankara Local Time: 10:^{00}–12:^{30}

MODERATOR: Bello Abdulkabir Opeyemi

Authors	Affiliation	Presentation title
Bello Abdulkabir Opeyemi **Calistus Ayegba** **Oludolapo Ibrahim Olanrewaju** **Oladayo Afolabi** **Ihedigbo Kingsley Sunday**	*Federal University of Technology Minna, Nigeria* *Victoria University of Wellington, New Zealand* *King Fahd University of Petroleum and Minerals, Saudi Arabia*	A REVIEW ON THE AWARENESS AND CHALLENGES OF BUILDING INFORMATION MODELLING FOR POST CONSTRUCTION MANAGEMENT IN THE NIGERIAN CONSTRUCTION INDUSTRY
Idris Abdullahi **Bamgbade Adebisi Abosede** **Bello Abdulkabir Opeyemi**	*Federal University of Technology Minna, Nigeria*	CONSTRUCTION ORGANISATIONAL PERFORMANCE AND THE AVAILABILITY OF ARTISANS AND TECHNICIANS AS IMPACTED BY TRANSPORTATION QUICK MONEY VENTURES IN NIGERIAN CONSTRUCTION INDUSTRY - A REVIEW
Ihedigbo Kingsley Sunday **Bello Abdulkabir Opeyemi** **Idris Abdullahi** **Oladayo Afolabi** **Semiu Mudasiru Abiodun**	*Federal University of Technology Minna, Nigeria* *King Fahd University of Petroleum and Minerals, Saudi Arabia*	EFFECT OF TIME PERFORMANCE ON EDUCATIONAL BUILDING PROJECTS IN NIGERIA
Yusuf Babangida Attahiru **Azman Mohamed** **Aliyu Abubakar Burga**	*Universiti Teknologi Malaysia* *Kebbi State University of Science and Technology, Nigeria*	Engineering effects of sugar for monitoring the hydration heat on cementitious material to form a crystalline structure
Bello Abdulkabir Opeyemi **Ihedigbo Kingsley Sunday** **Idris Abdullahi** **Semiu Mudasiru Abiodun** **Daniel Ichekani Agada**	*Federal University of Technology Minna, Nigeria*	AN ASSESSMENT OF THE FACTORS INFLUENCING TIME PERFORMANCE OF EDUCATIONAL BUILDING PROJECTS IN ONDO STATE, NIGERIA
Daniel Ichekani Agada **Calistus Ayegba** **Sunday Segbenu Nunayon** **Bello Abdulkabir Opeyemi**	*Federal University of Technology Minna, Nigeria* *The Hong Kong Polytechnic University*	A REVIEW OF THE INFLUENCE OF STAFFING METHODS ON CONSTRUCTION LABOUR PRODUCTIVITY IN ABUJA
Ouldyerou Abdelhak **Laid AMINALLAH** **Ali MERDJI**	*University of Mascara, Algeria*	Biomechanical Evaluation Of Bone Type And Dental Implant Macro Design Effect On Stress And strain Distribution: 3D FE Analysis
Durane Tchatchouang Chougong **Armel Zacharie Ekoa Bessa**	*SERECOMA IRAD-KRIBI, Cameroon* *University of Yaoundé, Cameroon*	SPATIAL AND VERTICAL DISTRIBUTION OF HEAVY METALS AND RADIONUCLIDES CONTAMINATION IN LOBÉ RIVER SEDIMENTS, SOUTH-WEST CAMEROON
Ebru AYKAN **Ali Rıza ŞENGÜL**	*Kayseri University, Turkey*	THE EFFECT OF THE ETHICAL LEADERSHIP BEHAVIOR OF THE MANAGERS OF BASIC EDUCATION INSTITUTIONS ON PERCEPTIONS OF ORGANIZATIONAL JUSTICE
Ebru AYKAN **Ahmet NAVRUZ**	*Kayseri University, Turkey*	THE EFFECT OF STUDENTS' SOCIAL MEDIA USE ATTITUDES ON ALIENATION BEHAVIOR: AN APPLICATION IN KAYSERİ

04.02.2022 | SESSION-1 | HALL-4

Cairo Local Time: 09:^{00}–11:^{30}

Ankara Local Time: 10:^{00}–12:^{30}

MODERATOR: Dr. Sheeba Sardar Ali

Authors	Affiliation	Presentation title
Ismail Olaniyi MURAINA **Moses Adeolu AGOI**	*Adeniran Ogunsanya College of Education, Lagos Nigeria*	Machine Learning Algorithms Selection Problems Resolved with Artificial Intelligent Rule-Based Expert System using VisiRule
Ephraim Ifediri Nwokporo **Dauda Aderemi Busari** **Emmanuel Chukwuebuka Orakwe**	*University of Ibadan, Nigeria* *Alex Ekwueme Federal University, Nigeria*	The Nigerian Indigenous Knowledge and Political Systems: A Practical Approach
Dr. Sheeba Sardar Ali	*Majma'ah University, KSA*	TASK-BASED TEACHING AND LEARNING-A NEW WAY OF TEACHING
BUI Anh Tuan **NGUYEN Ngoc Phuong Anh** **VO Minh Toan**	*Can Tho University, Vietnam*	Applying Kahoot! in Teaching and Learning Mathematics: An Empirical Study at Vietnamese High Schools
HIND ABDALAZIZ BIN JREAD AGEEL	*Bani walid University, LIBYA*	Common phobias among children in primary schools in Bani Walid city
Deepanwitha P **Dr. L.R.K. Krishnan**	*Mahatma Gandhi Institute of Technology, Hyderabad, India* *VIT Business School, Chennai, India*	Decision Making In The World Of Artificial Intelligence
Saxavat Heydarli	*Nahcivan State University, Azerbaijan*	SOME ISSUES OF REGULATION OF THE FOOD MARKET IN AZERBAIJAN
Todorka Glushkova **Dimitar Stoyanov**	*Plovdiv University, Bulgaria*	VIRTUALIZATION AND MODELING OF SERVICES IN A SCHOOL EDUCATIONAL PLATFORM
ASSOC. PROF. MONICA GAROIU	*UNIVERSITY OF TENNESSEE-CHATTANOOGA, USA*	ABDELKEBIR KHATIBI: WRITING ACROSS LANGUAGES
Dr. Salma Khan **ASIFA MUNJKHAL**	*University of Kashmir, India*	Gram Sabha Mobilization: An Initiative for Inclusive Governance by Civil Society Organizations in India

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04.02.2022 | SESSION-1 | HALL-5

Cairo Local Time: 09:^{00}–11:^{30}

Ankara Local Time: 10:^{00}–12:^{30}

MODERATOR: Mihaela Gabriela Dumitru

Authors	Affiliation	Presentation title
Dr. Kərimova Rəna Cabbar kızı **Rzayeva Sürəyya Cabbar kızı** **Əzizova Əsmət Nizami kızı** **İskəndərova Zülfiyyə Şamil kızı** **Bayramov Adil Allahyar oğlu** **Təhməzov Elçin Fərman oğlu**	*Azerbaijan Medical University*	THE EFFECT OF BIOLOGICAL FACTORS AND CHEMICALS ON THE HUMAN BODY
Doaa Elansary **Kahraman Gürcan**	*Erciyes University, Kayseri, Turkey*	Determining effective methods of eradication of Black mulberry idaeovirus (BMIV) and Mulberry badnavirus 1 (MBV-1) from ınfected black mulberry (Morus nigra L.)
Dr. Kərimova Rəna Cabbar kızı **İskəndərova Zülfiyyə Şamil kızı** **Məşədiyeva Bayramova Səbinə Ənvər kızı** **Şahməmmədova Sevinc Osman kızı** **İsmayılova Rita İsrafil kızı** **Yusifova Mətanət Yusif kızı** **Həsanova Xumar Əliövsət kızı**	*Azerbaijan Medical University*	ETIOLOGICAL FEATURES OF HEPATIC ISCHEMIA, ISCHEMIC NECROSIS AND FATTY DYSTROPHY
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04.02.2022 | SESSION-1 | HALL-6

Cairo Local Time: 09:^{00}–11:^{30}

Ankara Local Time: 10:^{00}–12:^{30}

MODERATOR: Prof. Dr. Adnan Celik

Authors	Affiliation	Presentation title
Dr. Zeynep YADİGAROĞLU	*Aksaray University, Turkey*	TECHNICS AND METHODS FOR BODILY AWARENESS IN CHOIR TRAINING
Prof. Dr. Adnan Celik	*Selcuk University, Turkey*	THE PLACE AND IMPORTANCE OF EFFECTIVE LEADERSHIP IN OVERCOMING ECONOMIC UNDERDEVELOPMENT
Prof. Dr. Adnan Celik	*Selcuk University, Turkey*	PROMINENT MOTIVATIONAL PRACTICES IN ORGANIZATIONS IN COVID-19 PANDEMIC
Dr. Murat KARTAL	*İstanbul University, Turkey*	HOLY PLACES IN KİLİS CITY CENTER AND ITS EVALUATION IN TERMS OF FAITH TOURISM
Yusuf KAPLAN **Süleyman ASLAN** **Kürşat ALKOYAK** **Özden SARIKAYA**	*Ministry of Agriculture and Forestry, Turkey*	R&D and Innovative Approach to Livestock of Cattle Research in Turkey
Bagırova Tamilla Ali kızı	*Azerbaijan State Pedagogical University*	The syncretic form of ashig art in the system of spiritual values Azerbaijan
Doç. Dr. Muhammet Sani ADIGÜZEL	*Fatih Sultan Mehmet Vakıf University*	THE MATTER OF PUBLISHING A BOOK
Alakbarova Khumar Elqam	*Institute of Oriental Studies of ANAS*	THE "NEW WAVE" IN EGYPTIAN LITERATURE AND ITS REPRESENTATIVES
Orhan Çoban **Ayşe Çoban** **Mert Bağcı**	*Gaziantep University, Turkey*	LOGISTICS SECTOR AND DRONE TRANSPORTATION: SUCCESSFUL IMPLEMENTATION EXAMPLES IN TURKEY AND IN THE WORLD
Orhan Çoban **Ayşe Çoban**	*Gaziantep University, Turkey*	DIGITAL COINS AND CRYPTO COINS AS A TYPE OF DIGITAL CURRENCY
Dr. Lect. Şaban ÇOBANOGLU	*Fatih Sultan Mehmet Vakıf University, Turkey*	THE TALE OF AN INTERNAL JOURNEY FROM CONFESSION TO PURIFICATION: SAMUEL TAYLOR COLERIDGE, "The Rime of The Old Mariner"

(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.

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IRIS RECOGNITION TECHNOLOGY: PRINCIPLES, MECHANISM, AND MARKET FORECASTING (2022-2030)

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Abstract
Iris Recognition Technology is a biometric method that takes an image of an eye pattern, converts the image into a binary template and then saves the data on a server for future matching. Iris cameras are used to learn the unique identity of an individual by analyzing unique random patterns that appear clearly inside the eye from a certain distance. It uses multiple techniques including optics, statistical inferences, pattern recognition and many more .Because the market is primarily driven by the increasing demand for security systems, some information about the market for this technology and future predictions has been presented in this paper.

Keywords: Iris Recognition, Mechanism, Eye pattern, Market Forecasting.

Introduction
With the rapid economic growth and the rapid change of science and technology, living in a highly information-based modern society, identity identification has penetrated into every aspect of people's life, The traditional identification methods such as passwords have the disadvantages of easy forgetting and easy counterfeiting, which do not meet the needs of modern digital society [1], It is impossible to find two completely identical patterns of the eye's iris, even in twins. Glasses and contact lenses, even coloured ones, will not affect the imaging process in any way. It should also be noted that the performed operations on the eyes, removal of cataracts, or implantation of corneal implants do not change the iris's characteristics; it cannot be altered or modified [2], iris-based identification technology has been paid more and more attention by academia and enterprises. Iris contains a lot of texture information. Its tissue structure has been finalized at the stage of embryonic development. Theoretically, these characteristics of the iris can become the best biometric means of anti-counterfeiting performance[1].
Iris patterns are distinct; no two irises are alike, even if they come from identical twins or the same person's left and right eyes. Figure 1 depicts an iris from the front.

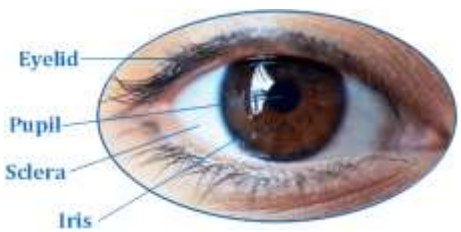

Figure 1: A view of the human iris from the front

Compared to other characteristics, the iris is a biometric modality with high distinctiveness, permanence, and performance, as shown in Figure 2 [3]. The iris has a number of other characteristics that make it a promising biometric candidate for next-generation smartphones:
1. The iris pattern consists of complex and distinctive ligaments, furrows, ridges, rings, corona, freckles and collarette, which makes it rich in texture.
2. Iris is relatively stable during adulthood of a person.
3. Irises have high pattern variability, even for identical twins and between the left and right eye of the same person.
4. Iris is an internal, yet externally visible organ.
5. It is extremely difficult to surgically spoof the iris.
6. Iris recognition is a widely deployed and a mature technology in specialist recognition system.

BIOMETRIC	FINGERPRINT	FACE	HAND GEOMETRY	IRIS	VOICE
					
Barriers to universality	Worn ridges; hand or finger impairment	None	Hand impairment	Visual impairment	Speech impairment
Distinctiveness	High	Low	Medium	High	Low
Permanence	High	Medium	Medium	High	Low
Collectibility	Medium	High	High	Medium	Medium
Performance	High	Low	Medium	High	Low
Acceptability	Medium	High	Medium	Low	High
Potential for circumvention	Low	High	Medium	Low	High

Figure 2: Various biometric modalities

Mechanism of the Iris Recognition System

The iris is the colored, doughnut-shaped portion of the eye behind the cornea and surrounds the pupil. A person's iris pattern is unique and remains unchanged throughout life. Also, covered by the cornea, the iris is well protected from damage, making it a suitable body part for biometric authentication, in this part of the paper the mechanism of the iris Recognition System is obtained.

The process of iris scanning begins with a photograph. A specialized camera, typically within three feet of the subject, uses an infrared imager to illuminate the eye and capture an extremely high-resolution photograph. This procedure takes between one and two seconds. The image of the eye is first processed by software that determines the iris's inner and outer boundaries. Additionally, image processing technologies are used to encode it. The iris code template generated from a live image is compared to previously enrolled ones in less than a few seconds, even on a database with millions of records, to determine if it matches any of them. From a distance of 5 to 24 inches, an iris recognition camera captures a black and white image. The camera operates on a non-invasive, near-infrared illumination system that is barely visible and extremely safe [4]. And this iris recognition cannot occur without the individual's consent. Figure 3 illustrates this [5].

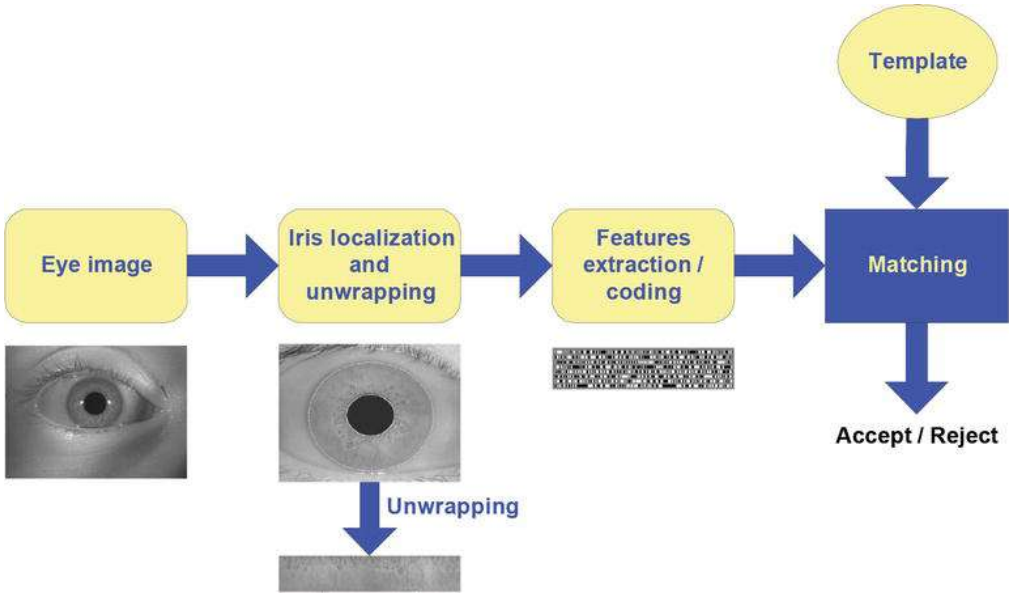

Figure 3: Mechanism of Iris Recognition.

Another research determined how the iris is recognized in three steps and explained how it was used in several areas such as Immigration Control, National ID, and Crime Investigation.
1- The pupil is detected first, followed by the iris and eyelids.
2- Superfluous parts (noise), such as the eyelids and lashes, are removed to leave only the iris, which is then divided into blocks and converted to feature values to quantify the image.
3- Matching is then performed against previously extracted feature data using the same methods.

General applications

The importance of secure authentication methods is growing. At the moment, highly accurate personal recognition is possible using the human iris, primarily due to its stability over time and uniqueness. Iris recognition systems are small, efficient, and have demonstrated promising performance. The combination of iris recognition and smart cards can be used to authenticate users and entities within the system, and smart cards can be used to create extremely secure systems. On-card matching is an exceptional method of user authentication within security applications that satisfies three critical requirements: security, usability, and data privacy. Iris authentication is the most feasible method due to its longevity and uniqueness. Iris authentication systems are small and efficient, with a track record of success. The importance of secure authentication methods is growing. Data encryption/decryption using the RSA algorithm is one of the best algorithms available. As a result, we can ensure a high level of data security [4].
Numerous businesses contribute to a safe and secure society by tightening immigration controls in response to global threats. The iris recognition solution enhances security and facilitates personal identification in light of the growing cross-border movement of people.
During exit or entry procedures at the passport control booth, the iris is photographed and compared to the government's immigration control database, enabling rapid and stringent personal authentication. This solution improves security by enforcing strict recognition, while also increasing convenience by streamlining authentication procedures.



Figure 4: Immigration Control using iris recognition systems.

By providing legal identification to all citizens, one of the well-known companies, NEC, promotes equal access to administrative services. The solution contributes to the development of more advanced national identification services by enhancing the security of national ID systems.

- Iris recognition is one of the methods used to collect biometric data required for issuing unique identification numbers.
- Accurate and rapid authentication is possible even in the absence of an identification card.
- When used in conjunction with mutually complementary biometric data, such as a fingerprint and a face, rigid personal authentication and a robust approach to impersonation are enabled.
- In addition to national identification cards, the solution is compatible with passports, driver's licenses, and voter identification systems.



Biometric iris recognition technology is closer to popular use than one might believe it to be. Over 1000 ATMs of financial institutions in Chicago and Montreal are now using iris recognition in lieu of debit cards.

The below image shows an iris based biometric authentication in ATMs.



Figure 5: Iris based biometric authentication in ATMs

Images of the face, fingerprint, and palm print, as well as the iris, are used to create a multimodal biometrics database for managing multiple biometric authentication data.

- By combining fingerprint and other biometric authentication systems, an individual can be identified with greater accuracy.
- The combined use of biometric data allows recognition even when biometric data, such as a fingerprint, is unavailable for identification due to injury.

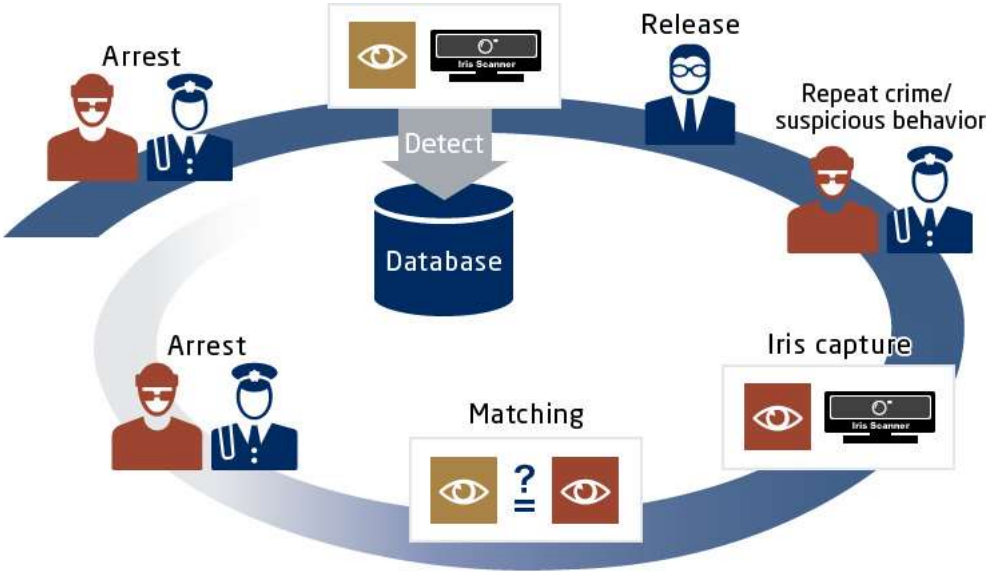

Figure 6: Crime Investigation using iris recognition systems.

Accuracy of Iris Recognition System

The iris is one of the unique biometric characteristics used for identification. During verification, about 260 key points are used (in comparison, fingerprint verification uses about 16 key points). Simultaneously, the template itself takes up a small amount of memory, which allows you to quickly authenticate a user and use massive databases with relatively little computing resources.

FAR — 0.00001 percent and FRR — 0.016 percent for access control and accounting systems that use iris identification. The NIST (National Institute of Standards and Technology) reports that iris recognition accuracy ranges between 90 and 99 percent. Additionally, Science Direct conducted a study that demonstrated the iris recognition method's 100 percent effectiveness.

It is believed that this method makes forgery of identification data impossible. In addition to the unique pattern of the iris, the human eye has unique reflective properties (due to the state of the tissues and natural moisture), which are taken into account during the reading process.

Additionally, some iris scanners capture the eyeball's involuntary movements that occur naturally in a living person. By the way, authentication via the iris of a deceased person is also considered impossible: after death, the pupil contracts, resulting in an iris area that is too small for scanning.

This biometric characteristic is extremely unlikely to change over time; the only possible explanations are medical surgery or severe injury.

Future of Iris Recognition Technology

Iris recognition remains one of the most accurate forms of identification available. Each iris is unique, so if a person has both irises scanned for identification purposes the chance of mistaken identity is extremely remote. And, unlike several other human characteristics currently used for identification, iris patterns stabilise by age 10 months and remain the same until the end of life.

Once an expensive and complex identification solution, recent technological developments mean iris recognition is now becoming a more cost-effective option for a range of

organisations and businesses, moving it closer to the mainstream. Here are a few of the areas where this technology is changing the world in which we live.

NEC group has already started to see the rollout of Iris Recognition technology to smartphones and devices. Samsung was the first to explore the opportunities that exist to incorporate Iris Recognition technology into their phones as a method of authenticating and unlocking your device and it is likely that other major brands such as Apple, Google and Huawei will follow suit.

In a bid to keep their customer's information as safe as possible, Samsung added Iris Recognition alongside other forms of biometric security in their Galaxy S8. Iris Recognition sits alongside fingerprint and facial recognition and can be combined with the more traditional password and pin. These additional security features assure users that access to their most personal information is protected.

There are still issues that persist around the use of Iris Recognition as a primary method of authentication on mobile devices. One of the major stumbling blocks is the lack of control of capturing conditions. Iris Recognition relies on consistent background lighting – something that can be difficult to manage on a mobile device that can lead to user frustration. Other barriers to implementation include the computation power of mobile devices that cannot keep up with the algorithm required to correctly identify and authenticate the iris. This again can lead to user frustration due to the slow experience of unlocking a device.

One area where we might start to see Iris Recognition more widely rolled out on mobile devices is as part of a two-factor authentication process for privileged access to apps such as internet banking and even secure email access. This would present an opportunity to use Iris Recognition sparingly rather than for every unlock of the device, adding to the security of those most relevant apps whilst maintaining a customer experience that is not frustrating and creates an extra level of trust in the security.

Iris Recognition Market and Future forcasting

Over the past few years, iris biometrics technology has made its way into consumer mobile devices, a development that has some heralded the rise of iris recognition in FinTech, IoT, and other hot verticals. Iris recognition has been widely rolled out on mobile devices as a part of the two-factor authentication process for privileged access to apps such as Internet banking and even secure email access.

The following figure shows the iris recognition technology market share 100% and the the growth of the iris biometrics market in the coming years by region.

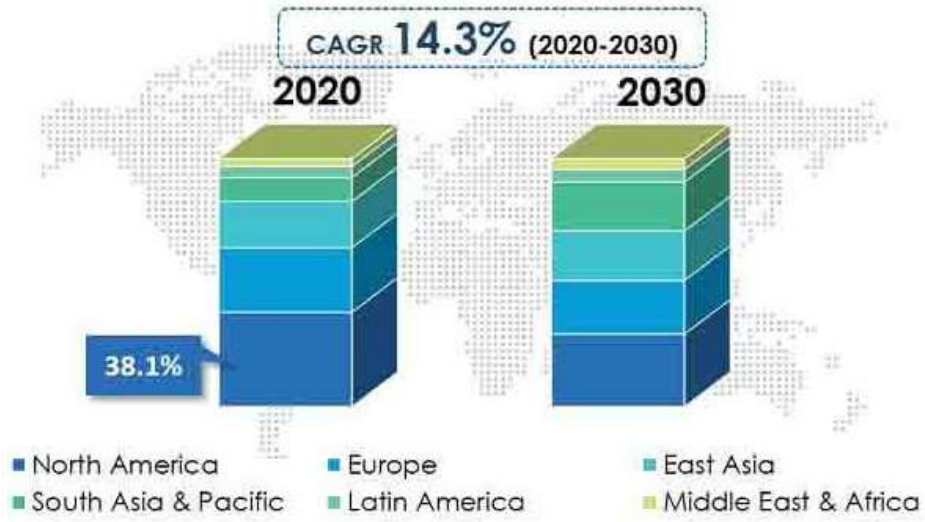

Figure 7: the iris biometrics market in the coming years by region (2020-2030).

The Global Passwordless Authentication Market size is shown in figure 8; it is estimated to be USD 35.48 billion in 2019 and is predicted to reach USD 456.79 billion by 2030 with a CAGR of 29.1% from 2020-to 2030. Passwordless authentication is a security process that relies on a few unique biological characteristics of an individual in order to verify his/her authenticity. It is a method of authenticating a user's identity without the use of passwords. Passwordless authentication comes with several benefits such as improved user experience, better security, and reduction in the total cost of ownership. In order to get confirmation, both samples (human and machine) of the biometric data should match.

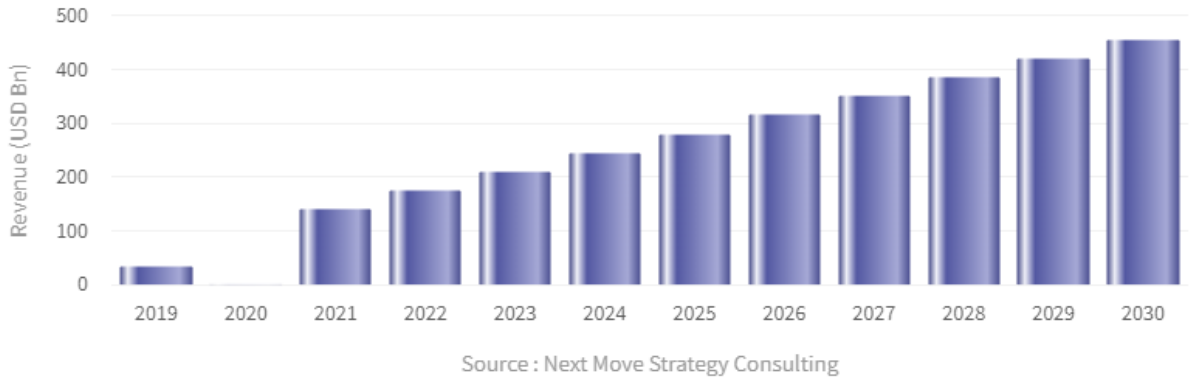

Figure 8: Global passwordless authentication market revenue (2019-2030).

The Global Passworldess Authetication Market size is estimated to be USD 35.48 billion in 2019 and is predicted to reach USD 456.79 billion by 2030 with a CAGR of 29.1% from 2020-2030. Passwordless authentication is a security process which relies on few unique biological characteristics of an individual in order to verify his/her authenticity. It is a method of authenticating user's identity without the use of passwords. Passwordless authentication comes with several benefits such as improved user experience, better security, and reduction in total cost of ownership.In order to get confirmation, both samples (human and machine) of the biometric data should match.

Growing penetration of smartphones and other consumer electronic devices is a major factor contributing to the growth of the biometric authentication market. In addition, growing need for an additional layer of security beyond passwords is another factor augmenting the growth of passwordless authentication market.

Moreover, rapid adoption of technologies such as artificial intelligence and internet of things (IoT) in devices such as smartphones and tablets among others is another key factor responsible for the growth of the passwordless authentication market. Fingerprint sensors and smartcards are used to verify identities, and these security points allow for a seamless experience and makes way for a smooth flow of data between points. Most organizations have adopted the use of fingerprint authentication and smartcards in their offices, for their employees. Employees make use of either smart cards or biometric authentication to enter/exit the office premises. Few organizations make use of facial recognition, iris recognition, and voice analysis to authenticate its employees. In addition to this, passwordless authentication has gained prominence due to the rising cases of data theft issues across the globe. The need for security, beyond passwords have increased due to data theft issues in devices such as laptops, smartphones, and tablets among others. Fingerprint sensors, facial recognition are some of the ways modern devices can be secured in order to mitigate data theft issues.

Fingerprint recognition and facial recognition are widely implemented in consumer electronic devices such as smartphones and tablets. Fingerprint recognition, and facial recognition offers

several benefits such as heightened security, accountability, ease of use and its non-transferable nature.

Conclusion

Iris recognition continues to be one of the most promising biometric technologies for establishing a person's identity. The realization of the iris's potential for non-contact identification in conjunction with a face image and possibly other contactless biometric identifiers is particularly in demand. As a result, the most pertinent research directions are to enhance recognition in non-invasive scenarios through the enhancement of sensors and the system's information. It is very clear that market forecasts showed that the size of the iris recognition market increases due to the period 2020-2030.

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THE ROLE OF ARTIFICIAL INTELLIGENCE IN IMPROVING THE PERFORMANCE AND EFFICIENCY OF HUMAN RESOURCE MANAGEMENT

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Abstract
The growing development in the technological field has led to the emergence of many modern sciences, which in turn serve many fields and disciplines, among them the science of artificial intelligence which came as a result of the experiences, expertise and intelligence of the human being, which has been translated into programs and devices developed to serve individuals, such as conducting scientific research experiments or in the service of institutions. To carry out multiple tasks and activities, and human resource management has witnessed major transformations as a result of the rapid changes in the use of modern technologies, especially after the extensive use of artificial intelligence systems and its impact on the human resources management at the present time, so this paper came to shed light on the role of Artificial intelligence and the positive effects it achieves in improving the efficiency of human resource management performance. The researchers will adopt the descriptive-analytical approach in this paper in order to reach a clarification of the ideas presented.

Keywords: Artificial Intelligence, Human Resources, Management.

دور الذكـــاء الاصطنـاعي فـي تحسيـن أداء وكفـاءة إدارة المـوارد البشريـة

الملخص
أدى التطور في المجال التكنولوجي إلى ظهور العديد من العلوم الحديثة والتي بدورها تخدم الكثير من المجالات والتخصصات، ومن بينها علم الذكاء الاصطناعي الذي جاء حصيلة تجارب وخبرات وذكاء الانسان، والتي تم ترجمتها إلى برامج وأجهزة توضع لخدمة الأفراد مثل القيام بتجارب البحث العلمي أو في خدمة المؤسسات للقيام بالمهام والانشطة المتعددة، كما أن إدارة الموارد البشرية قد شهدت تحولات كبيرة نتيجةً للتغيرات المتسارعة في استخدام التقنيات الحديثة، خاصة بعد الاستخدام الموسع لأنظمة الذكاء الاصطناعي وما له من تأثير في طريقة إدارة الموارد البشرية في الوقت الحاضر، لذا جاءت هذه الورقة لتسليط الضوء على دور الذكاء الاصطناعي وما يحققه من آثار إيجابية في تحسين كفاءة أداء إدارة الموارد البشرية، سيعتمد الباحثان المنهج الوصفي التحليلي في هذه الورقة من أجل الوصول إلى توضيح الأفكار المطروحة.

الكلمات المفتاحية: الذكاء الاصطناعي، الموارد البشرية، الإدارة.

المقدمة

أحدثت التطورات العلمية والثورة المعلوماتية والاتصالات وتطبيقاتها المتطورة والمتجددة في الألفية الثالثة من القرن الحادي والعشرين، تحولات جذرية وعميقة زادت من سرعة عملية الاتصالات وتحسين الأداء، إذ يتجه العالم اليوم إلى ما يسمى " بإنترنت الأشياء"، من خلال ربط كل شيء يمكن أن تتعرف عليه شبكة الإنترنت من خلال بروتوكولات الإنترنت المعروفة، فلم تعد العوائق التقنية حائلاً أمام المد التطوري لهذه الخدمة في هذا العصر، فأصبحت الثورة المعلوماتية بقوتها وقدرتها الهائلة تُمثل العصب الرئيس لكافة التغيرات الممكنة في مختلف نواحي الحياة، والكثير من المجالات الأخرى التي تدخل فيها التكنولوجيا، التي أصبحت سمة من سمات التقدم الحضاري والتكنولوجي والاقتصادي، ولعل الذكاء الاصطناعي في الإدارة من أبرز الاستخدامات على الإطلاق لكل منظمة تبحث عن التميز وتحسين المركز التنافسي لها، وإرضاء كافة الأطراف المرتبطة بها والمؤثرة فيها(الشوابكة،2017).

وباعتبار أن إدارة الموارد البشرية تُعد من أهم المهام والوظائف بين أقسام الإدارة المختلفة في المنظمة، كونها تهتم بأغلى وأثمن الموارد والتي ترتكز عليها في تنفيذ أعمالها، وذلك نتيجة الخصائص النادرة التي يتمتع بها، وبشكل خاص ندرته وصعوبة محاكاته أو تقليده من قبل المنافسين الأمر الذي ينعكس في احتكار المنظمة له، ومن ثم تميزها مقارنة بالمنظمات الأخرى، لذلك فهي مجبرة على تحديث وتطوير أسلوب إدارة هذه الموارد بما يتماشى مع متطلبات العصر، فتطبيق تكنولوجيا المعلومات والاتصال في إدارة الموارد البشرية أصبح ضرورة حتمية كونها سلاح استراتيجي لمواجهة التحديات التي تواجهها المنظمة في هذا العصر كما وتزداد أهمية الاعتماد على التكنولوجيا في إدارة الموارد البشرية من خلال وسائلها المتعددة من أجهزة كمبيوتر وبرامج وتطبيقات وشبكات وأدوات حفظ وتخزين المعلومات التي بسطت وسهلت الوظائف المتنوعة والاجراءات المعقدة داخل المنظمة. وهو ما ينعكس على تحسين الأداء العام للمنظمة وبالتالي تحقيق أهدافها وبناءً على ما سلف فإن معالجة هذا الموضوع تتم من خلال طرح إشكالية الموضوع من خلال السؤال الآتي:

إشكالية البحث

في ظل التغيرات التكنولوجية المتسارعة وظهور العديد من أساليب الإدارة الحديثة التي ساهمت في تحسين أداء الوظائف داخل المنظمة، جاءت هذه الدراسة لتجيب عن الأسئلة الآتية:

- ما هو مفهوم تطبيقات الذكاء الاصطناعي؟
- ماهو مفهوم إدارة الموارد البشرية؟
- في ماذا تكمن أهمية تبني تطبيقات الذكاء الاصطناعي في إدارة الموارد البشرية؟
- ما هو دور تطبيقات الذكاء الاصطناعي على تحسين أداء وكفاءة إدارة الموارد البشرية؟

أهداف البحث

يهدف هذا البحث إلى تسليط الضوء على مفهوم تطبيقات الذكاء الاصطناعي، ومفهوم إدارة الموارد البشرية، والتعرف على أهمية تبني تطبيقات الذكاء الاصطناعي في إدارة الموارد البشرية، بالإضافة إلى معرفة دور أنظمة تطبيقات الذكاء الاصطناعي على تحسين أداء وكفاءة إدارة الموارد البشرية.

أهمية البحث

تكمن أهمية البحث من أهمية المتغيرات المبحوثة ، إذ تشكل تطبيقات الذكاء الاصطناعي إحدى التطبيقات الحديثة والتي من الممكن أن يعتمد نجاح المنظمة واستمراريتها على مدى قدرتها من الاستفادة من هذه التطبيقات، فضلاً عن أن الموارد البشرية تشكل أهم الموارد التي تمتلكها المنظمة وتميزها عن المنظمات الأخرى، كما أن هذه الورقة البحثية تسعى إلى معرفة مدى إمكانية الإستفادة من تطبيقات الذكاء الاصطناعي في تحسين أداء وكفاءة إدارة الموارد البشرية، لتقديم بعض المقرحات من أجل الاستفادة من تطبيقات الذكاء الاصطناعي.

منهجية البحث

في إطار الترابط ما بين التفكير في مشكلة البحث وأهدافها وأهميتها، وحيث أن البحث ذا مهمة نظرية فإن الباحثين استفادوا من المنهج التحليلي الوصفي للمعطيات ذات الصلة بالبحث، التي تمّ الحصول عليها من الكثير من المصادر التي تمّ الإطلاع عليها، ومن ثم استخلاص النتائج والأفكار التي توضح الأفكار المطروحة في البحث.

أولاً: الإطار المفاهيمي للبحث

أولاً: الذكاء الاصطناعي

الذكاء الاصطناعي هو نتاج 2000 عام من تقاليد الفلسفة ونظريات الإدراك والتعلم و 400 عام من الرياضيات التي قادت إلى امتلاك نظريات في المنطق، والاحتمال والحوسبة ، وهو تاريخ عريق في تطور علم النفس وما كشفت عن قدرات وطريقة عمل العقل البشري، بالإضافة إلى أن الذكاء الاصطناعي هو ثمرة الجهود المضنية في اللسانيات التي وضحت تركيب ومعاني اللغة وتطور علوم الحاسوب وتطبيقاتها، الأمر الذي جعل من الذكاء الاصطناعي حقيقة مدركة (ياسين، 2011). و أصبح الذكاء الاصطناعي أكثر تقدماً وقرباً من حياتنا اليومية، خاصة في المجال المعروف بتعلم الآلة، حيث يتألف من خوارزميات تتعلم عن طريق اكتشاف الأنماط واستخلاص النتائج من خلال البيانات الخام غير المصنفة، وما أن تقوم هذه الخوارزميات الاستكشافية بدراسة ما يكفي من البيانات وبناء ما يكفي من البيانات، وبناء مكتبة من الاستجابات الروتينة، ليصبح من الممكن تطبيق هذه الحسابات لإتخاذ القرارات وحساب التوقعات عند مواجهة أوضاع مشابهة في المستقبل(المطيري،2019). فالذكاء الاصطناعي هو أحد علوم الحاسوب الحديثة التي تبحث عن أساليب متطورة للقيام بأعمال واستنتاجات تشابه ولو في حدود محدودة تلك الأسباب التي تنسب لذكاء العنصر البشري، والغرض منه إعادة البناء باستخدام الوسائل الاصطناعية، الحواسيب، والتفكير والإجراءات الذكية(عثامنية، 2019). ويرى Patterson أن الذكاء الاصطناعي نوع من فروع علم الحاسبات الذي يهتم بدراسة وتكوين منظومات حاسوبية تظهر مجموعة من صيغ الذكاء، وهذه المنظومات لها القدرة والقابلية على تقديم استنتاجات مفيدة حول المشكلة الموضوعة كما تستطيع هذه المنظومات فهم اللغات الطبيعية أو فهم الإدراك الحي وغيرها من الإمكانات التي تحتاج الذكاء عند تنفيذها من قبل العنصر البشري(شيخ،2018). في حين ذكر أشهر الباحثين في الذكاء الاصطناعي أن الذكاء الاصطناعي فن تصنيع الآلات القادرة على القيام بعمليات تحتاج الذكاء عندما يقوم بها العنصر البشري (Anusha,2016).

وبناء على ما سلف يُمكننا تعريف الذكاء الاصطناعي علم حديث ناتج عن الثورة التقنية التي حدثت في علم الحاسوب والتحكم الآلي من جهة وعلم المنطق والرياضيات وعلم النفس من جهة أخرى، حيث يقوم هذا العلم على تلك القواعد الرياضية والأجهزة والبرامج التي تم تجميعها في الحاسبات الآلية التي تقوم بدورها على العديد من المهام والعمليات التي يمكن للمورد البشري أن يقوم بها غير أنها تختلف في سرعتها ودقتها.

أهمية الذكاء الاصطناعي

إن أهمية الذكاء الاصطناعي أكبر من أن تحصى المتوقع لأنه يساهم في المحافظة على الخبرات البشرية المتراكمة بنقلها للآلات الذكية، ليتمكن العنصر البشري من استخدام اللغة البشرية في التعامل مع الآلات بدلاً من لغات البرمجة الحاسوبية، مما يجعل استخدام الآلات في متناول كافة شرائح المجتمع لتشمل أيضاً ذوي الاحتياجات الخاصة، بعد ما كان التعامل مع الآلات المتقدمة مقتصراً على المتخصصين وذوي الخبرات، كما يلعب الذكاء الاصطناعي دوراً هاماً في العديد من الميادين الحساسة كالمساعدة في تشخيص الأمراض ووصف الأدوية، والاستشارات القانونية والمهنية، والتعليم التفاعلي، والمجالات الأمنية والعسكرية، وغيرها من الميادين الأخرى، بالإضافة إلى مساهمة الأنظمة الذكية في المجالات التي يصنع فيها القرار، فتلك الأنظمة تتمتع بالاستقلالية والدقة والموضوعية، وبالتالي تكون قراراتها بعيدة عن الخطأ والانحياز والعنصرية أو الأحكام المسبقة أو حتى التدخلات الخارجية أو الشخصية، وأيضاً تخفف الآلات الذكية على المورد البشري الكثير من المخاطر والضغوطات النفسية، وتجعله يركز على أشياء أكثر أهمية وإنسانية(شنبي،2016).

أهداف الذكاء الاصطناعي

إن الهدف من الذكاء الإصطناعي كما وضحه (Cazenave,2011) هو تفسير الموقف أو النص في بعض الأوقات، لأنه يتعلق بنشاط البناء، ووظيفة الهدف أو الموقف في حل المشكلات المختصة بالتصميم ، والتخطيط، والتشخيص. بينما تم توضيح أهداف الذكاء الاصطناعي من قبل الأكاديمية العربية البريطانية (2019) و عفيفي (2014) من خلال تمكين الآلات من معالجة المعلومات بشكل قريب من طريقة البشر في حل المسائل، بمعنى آخر المعالجة المتوازية ليتم تنفيذ عدة أوامر في نفس الوقت وهذا قريب من طريقة البشر في حل المسائل. بالإضافة إلى فهم أكبر لماهية ذكاء العنصر البشري عن طريق فك أغوار العقل البشري حتى يسهل محاكاته، كما هو معروف أن الجهاز العصبي والعقل البشري أكثر الأعضاء البشرية تعقيداً لأنهما يعملان بشكل مترابط ودائم في التعرف على الأشياء.

ونلاحظ مما سلف أن هدف الذكاء الإصطناعي هو تقديم تفسير علمي كامل عن الذكاء البشري، من أجل جعل الآله أكثر ذكاء لتكون أكثر فائدة، من خلال تزويدها بالمعرفة البشرية المتراكمة، وتخزينها من أجل استخدامها بالوقت المناسب.

تطبيقات الذكاء الإصطناعي

تعددت تطبيقات الذكاء الإصطناعي بتعدد مجالات استعمالها ، فهي عبارة عن فروع له يتم استعمالها حسب الغرض الذي يؤديه كل نوع من بين هذه التطبيقات، وستستعرض أهم التطبيقات فيمايلي:

أولاً : النظم الخبيرة: ظهرت النظم الخبيرة كأحد أهم تطبيقات الذكاء الإصطناعي لتقوم بالعديد من المهام والأدوار، حيث حلت تطبيقات الذكاء الإصطناعي محل الخبير البشري لقدرتها على حل المشاكل المعقدة التي تتطلب جهد وفكر بشري كبير، وتتميز بالسرعة والدقة في إجابتها على العديد من التساؤلات والمشاكل التي تواجه العاملين أثناء قيامهم بالعمل.

فالنظام الخبير هو نظام معلومات يعتمد على المعرفة بحيث يستخدم معرفته حول تطبيق معين معقد ويتصرف كإستشاري خبير لصالح المستخدم النهائي(خوالدة،2017). حيث يتم تصميم النظم الخبيرة لجمع المعرفة الضمنية في منطقة محددة جداً، ومحددة من الخبرة البشرية التي يجمعونها وهي معرفة العاملين المتميزين الأكفاء حيث يتم وضعها في شكل مجموعة من القواعد على شكل نظم وبرمجيات حيث تضيف بدورها ذاكرة تعليمية للمنظمة يمكن تخزينها واسترجاعها في وقت الحاجة (Laudan& Laudan,2010).

ثانياً : الشبكات العصبية الإصطناعية: تقوم هذه الشبكات على فكرة خلق قدرات الذكاء والتعلم في منظومات الحاسوب وتميل إلى استخدام الرموز في حل المشاكل من خلال عملية التعلم والتكيف الذاتي مع الظروف والمتغيرات موضوع الفحص والتحليل والدراسة (Alter,2002).كما وتُعد الشبكات العصبية أنموذج تفكير مبني على العقل البشري ، حيث يتكون العقل من مجموعة كبيرة ومتشابكة من الخلايا العصبية، أو وحدات تشغيل المعلومات الرئيسية والتي تسمى عصبونات والشبكات العصبية الإصطناعية هي نظم تقوم بتمثيل الذكاء من خلال مجموعة من عناصر المعالجة التي تشبه العصبونات الموجودة في العقل البشري(Graupe,2007).

ثالثاً: نظم الخوارزميات الجينية: هي برامج حاسوبية تحاكي عمليات بيولوجية من أجل تحليل مشاكل النظم التطورية، وظهرت الخوارزميات الجينية بشكلها الحالي في العام(1975) على يد جون هولاند في جامعة ميتشغان، وتطورت في بداية الثمانينات لتصبح أحد الطرق الهامة والفعالة للتعامل مع مسائل الاستقصاء المعقد، والبحث عن الأمثلية، ووصفت بالجينية نظراً لإعتمادها الشديد على محاكاة عمل الجينات الوراثية للتوصل للحل الأمثل(جباري، 2017). كما تطبق الخوارزمية الجينية بنجاح لإيجاد الحلول المقبولة في المسائل المتعلقة بالعلوم ومنها العلوم الطبية والهندسية، ذلك أنها اختصرت الكثير من الوقت والجهد لدى مصممي الأنظمة والبرامج، وذلك عن طريق ايجادها خوارزمية عامة يعتمد عليها في حل معظم أنواع المسائل بدلاً من بناء خوارزمية خاصة لكل مسألة مع مراعاة التغيرات اللازمة وملائمتها لخصوصية كل مسألة من حيث الحجم ونوع البيانات المستعملة وطبيعة دالة الهدف والقيود لكل مسألة(Sadaf & Ghodrati,2015).

رابعاً: نظم المنطق الغامض: ظهر مصطلح المنطق الغامض أول مرة في عام 1964 حيث تمت صياغته من قبل Lotfi Zadeh الأستاذ في Berkeley وكانت الفكرة الأساسية هي اتمام التفكير عن طريق ربط قواعد الحالات في ضوء الشروط التي تخضع للتغيير، ويستعان بالمنطق الغامض المحوسب للتعبير عن الظواهر على حقيقتها وفي ضوء سيرورة الظاهرة المتحولة باستمرار(Alter,2002). كما تتكون تقنية المنطق الغامض من مجموعة متعددة تضم مفاهيم وتقنيات للتعبير أو الاستدلال على المعرفة غير المؤكدة، المتغيرة أو المجسدة تماماً في الواقع، ويستطيع المنطق الغامض تشكيل سلسلة قواعد لموضوع لا يحتمل إلا القيم غير البنائية أو البيانات غير التامة والحقائق المبهمة أو الضبابية، بعكس المنطق القاطع الذي تعمل من خلاله برامج الكمبيوتر التقليدية أي منطق الوصل والقطع، ويقوم المنطق الجديد على عملية استكشاف الظواهر والحالات الأخرى الوسطى(طيار، 2012).

متطلبات نجاح تطبيقات الذكاء الإصطناعي

هناك متطلبات يجب اتخاذها للإستفادة من تطبيقات الذكاء الإصطناعي من خلال التأكد من وجود استراتيجية معينة بشكل جيد لإستخدام البيانات وتطبيقها، بالإضافة إلى تحليل كيفية استخدام البيانات ، مع فهم الدور الذي يمكن أن تؤديه تطبيقات الذكاء الإصطناعي للمساعدة في بناء قيمة لبيانات العاملين والمراجعين. كذلك استكشاف إمكانية تطوير مركز تميز للذكاء الإصطناعي والذي بدوره من الممكن أن يوفر قدرة مركزية يمكن تطبيقها عبر المنظمة ، وقد يتضمن ذلك موارد خارجية يمكن أن توفر المرونة وسرعة التنفيذ. بالإضافة إلى إنشاء بيئة قابلة للتطوير للإختبار والتعلم التي يمكنها استكشاف عمليات الذكاء الإصطناعي مما يزيد من سرعة الابتكار.(Marous,2018) .

ثانياً: إدارة الموارد البشرية

إن إدارة الموارد البشرية بشكلها الحديث ليست وليدة اليوم، وإنما هي نتيجة لمجموعة من التطورات المتداخلة فيما بينها، وساهمت بشكل مباشر أو غير مباشرفي ظهور الحاجة إلى إدارة الموارد البشرية المتخصصة التي ترعى شؤون العاملين في المنظمة وتعمل على توفير أنجع الآليات لإدارة الطاقات البشرية بكفاءة ، ليتم من خلالها زيادة إنتاجية العاملين. وعليه، اختلفت وجهات النظر في تحديد مفهوم موحد لإدارة الموارد البشرية بحكم التطور الاقتصادي، الاجتماعي السياسي والثقافي، فذكر الحريري(2012) أن إدارة الموارد البشرية إدارة تركز على النشاطات الإدارية الخاصة والمتعلقة بالأفراد والعاملين مثل التخطيط في إدارة الأفراد وإدارة الموارد البشرية من أجل تحقيق أهداف عليا في تنمية وتطوير الموارد البشرية والكوادر البشرية. بينما ذكر رضوان(2012) بأنها جميع الأنشطة الإدارية المرتبطة بتحديد احتياجات المنظمة من الموارد البشرية وتنمية قدراتها ورفع كفاءتها ومنحها التعويض والتحفيز والرعاية الكاملة من أجل الاستفادة القصوى من جهدها وفكرها لتحقيق أهداف المنظمة. كما عُرفت إدارة الموارد البشرية بأنها مدخل أساسي ومحور عمل المنظمة لأنها تعمل على تحقيق أهدافها من خلال السياسات والممارسات التي تقوم بها وتنعكس على باقي وظائف المنظمة(Jaradat & Azam,2013).

ونلاحظ مما سلف أن إدارة الموارد البشرية تُعد إحدى الأنشطة الإدارية التي تقوم بتوفير الموارد البشرية اللازمة كماً ونوعاً والعمل على تطويرها وتحفيزها والمحافظة عليها وصيانتها وتنظيم علاقاتها مع المنظمة، بالإضافة إلى اهتمامها

بالعلاقات الإنسانية للعاملين بما يضفي روح التعاون ويضمن خلق الالتزام والوفاء والتكامل وعدم التعارض بين أهدافهم وأهداف المنظمة التي يعملون بها.

أهمية إدارة الموارد البشرية

إن أهمية إدارة الموارد البشرية في المنظمات اكتسبتها من الممارسات التي تقوم بها لإبراز أهمية الموارد البشرية وتحقيق طموحاتها وتلبية حاجاتها ورغباتها بما يسهم في تعظيم منافع كل من المنظمة والموظفين؛ ومن الأسباب التي كانت وراء هذه الأهمية التي احتلتها إدارة الموارد البشرية بقدرتها على جذب واستقطاب وتعيين أفضل العناصر البشرية لشغل الوظائف الشاغرة داخل المنظمة، مما ينعكس على كل من مستوى الإنتاجية والربحية داخل المنظمة؛ وتوفير بيئة عمل ملائمة تَعمل على تحفيز الموارد البشرية العاملة وتُشجعها على العطاء ؛ إضافةً إلى معالجتها الفورية والسريعة للمشاكل التي من الممكن مواجهتها في مجال التعيين وتقويم الأداء والتدريب والترقية التي توفر الكثير من التكاليف الناتجة عن دوران العمل، أو زيادة معدلات الغياب والتسرب الوظيفي ،أو انخفاض الانتاجية ومستويات الأداء(نعمات،2018).

أهداف إدارة الموارد البشرية

هناك العديد من الأهداف التي تسعى إدارة الموارد البشرية إلى تحقيقها في المنظمات، وهذه الأهداف تعكس الدور الذي تقوم به هذه الإدارة، وتنبثق أهداف إدارة الموارد البشرية من أهداف الفئات التي تقع داخل المنظمة أو خارجها كما ذكرها فرخة(2017) وتتمثل فيما يلي:

أولاً: الأهداف على مستوى المنظمة: إن الهدف االرئيسي لإدارة الموارد البشرية في جميع المنظمات سواء كانت كبيرة أو صغيرة، عامة أو خاصة من خلال تزويد المنظمة بموارد بشرية فعالة وتطويرها، وينبثق عن هذا الهدف مجموعة أهداف منها تحقيق تكامل إدارة الموارد البشرية مع الخطط الاستراتيجية للمنظمة، وولاء العاملين من أجل تحقيق أهداف المنظمة والإخلاص لها، بالإضافة إلى المرونة التي يتم من خلالها التكيف مع الظروف المحيطة، كذلك تحقيق الجودة من خلال العاملين والخدمات التي تقدمها المنظمة وصورتها الذهنية، ووضع التنبؤات اللازمة لاحتياجات المنظمة من القوى العاملة، كذلك وضع خطط القوى العاملة والإشراف على تنفيذها.

ثانياً: الأهداف على مستوى المجتمع: تتمثل هذه الأهداف في استخدام وتشغيل الأفراد بالأعمال المتنوعة وفقاً لكفائتهم ومؤهلهم، وإتاحة الفرصة للمجتمع للتطور والنمو في جميع جوانبه، مع الاستجابة لبعض المحددات الاجتماعية في هذا المجال، كالتشريعات والقوانين، ووجود ظروف عمل جيدة تمكنهم من العمل الفعال الذي يزيد من انتاجيتهم، وبالتالي مكاسبهم المادية، بالإضافة إلى تحسين نوعية الحياة الوظيفية للعاملين وانعكاس ذلك على حياتهم الاجتماعية، من خلال تحسين مستويات المعيشة الاجتماعية بسبب الرفاهية التي يتلقاها العاملين.

ثالثاً: الأهداف على مستوى العاملين: تتمثل بعملية جذب المرشحين والاحتفاظ بالجيدين منهم، وتوفير ظروف وشروط عادلة للتوظيف، واقتراح السياسات والأنظمة واللوائح المتعلقة بالتوظيف والمكافآت والأجور والحوافز والمنافع وصحة وسلامة العاملين، وتطبيق أسس عادلة قائمة على الجدارة في التوظيف والتنافس الحر بعيداً عن التحيز والمحاباة، ورفع كفاءة العاملين من خلال التدريب والتوجيهه بناءً على أسس علمية، بالإضافة إلى تكييف وإدماج العاملين وتقليل الفجوة بينهم وبين المنظمة والمجتمع.

وظائف إدارة الموارد البشرية

تتكون من مجموعة من الوظائف التي ذكرها الجربوعة(2017) فيما يلي:

أولاً: وظيفة تكوين الموارد البشرية: وهي نشاط رئيسي يتكون من أنشطة فرعية مترابطة ومتكاملة يشكل مجموعها سلسلة من الأعمال التي تقوم من خلالها إدارة الموارد البشرية بالأنشطة التالية: تصميم وتحليل العمل، التخطيط للموارد البشرية، استقطاب الموارد البشرية، اختيار وتعيين الموارد البشرية، التأهيل.

ثانياً: وظيفة تنمية وتطوير الموارد البشرية: تتمثل في تدريب وتنمية العاملين من خلال اكساب العاملين مهارات ومعارف أو سلوكيات جديدة لتحسين الأداء ومعالجة جوانب الضعف فيه، وتطوير المسار الوظيفي للعامل على امتداد عمره الوظيفي من خلال الوظائف المتتالية التي يشغلها ليحققوا أهداف المنظمة، بالإضافة إلى إدارة الأداء التي من خلالها يتأكد المديرون من أنشطة العاملين أن نتائج أدائهم تتوافق مع الأهداف التنظيمية.

ثالثاً: وظيفة تحفيز الموارد البشرية: فالحوافز تأتي لمكافأة الموارد البشرية عن تميزها في الأداء.

رابعاً: الرواتب والأجور والمكافأة: وهي الوظيفة التي تُعنى بتقييم التعويضات المباشرة للعاملين من رواتب وأجور و حوافز تكون مرتبطة بالعمل والتعويض غير المباشر من مكافأة معنوية للعامل كالمزايا الاجتماعية والصحية المرتبطة بمتغيرات متنوعة، الأمر الذي يؤدي إلى زيادة الدافعية والرضا لدى العاملين مما ينعكس على أدائهم وإنتاجيتهم.

خامساً: السلامة والصحة المهنية: هو الوظيفة التي تُعنى بممارسة عدد من الأنشطة بهدف حماية عناصر الانتاج، وفي مقدمتها المورد البشري في المنظمة، من التعرض للحوادث والإصابات خلال العمل، بتوفير الظروف المادية والنفسية المناسبة للعاملين لأداء أعمالهم بإنتاجية عالية.

سادساً: وظيفة تنظيم علاقات العمل: في هذه الوظيفية تقوم إدارة الموارد البشرية بالموازنة بين كل من حق المنظمة في سعيها لتحقيق أهدافها العليا وحق النقابات العمالية التي تفاوض لصالح أعضائها، وحق العاملين في حرية اختيار ممثليهم وإشباع رغباتهم.

ثانياً: الإطار التحليلي للبحث

أهمية تبني تطبيقات الذكاء الإصطناعي في إدارة الموارد البشرية

أشار نيكيتاس وزملاءه (Nikitas, et al.,2020) أن الذكاء الإصطناعي مفهوم قوي لا يزال في مهده ولديه القدره على التطور إذا تم استخدامه بشكل صحيح كوسيلة من أجل التغيير نحو الإيجابية، والذي من الممكن أن يعزز التحولات المستدامة إلى نماذج للعيش أكثر كفاءة في استخدام الموارد المتنوعة. فتطبيقات الذكاء الاصطناعي إذا تم توظيفها في المجالات التقنية والعلمية، والعلوم الإنسانية، وتعمل تطبيقات الذكاء الإصطناعي على تطوير أداء إدارة الموارد البشرية في المنظمات، وتحسين مخرجاتها من خلال ارتباطها بالعديد من المهام، كتقويم أداء العاملين، ومساعدة الإدارة في عملية اتخاذ القرار، بالإضافة إلى تحليل البيانات وقياسها من خلال مؤشرات الأداء والوصول إلى البيانات التي تنعكس على الأداء الفعلي للمنظمة بشكل أكثر دقة وواقعية مقارنة بما يمكن أن يتوصل إليه استخدام الأنظمة التقليدية المعتمدة الموارد البشرية؛ فتهتم تطبيقات الذكاء الاصطناعي بتصميم الأنظمة التي توضح الذكاء الإنساني: (فهم اللغة- تعلم معلومات جديدة- الاستدلال وحل المشاكل)، كما وتقوم تطبيقات الذكاء الاصطناعي بالكشف عن أوجه النشاط الذهني الانساني بهدف تطبيقها على الحاسبات الآليه(خوالدة،2019). كما وتساعد العديد من تطبيقات الذكاء الاصطناعي إدارة الموارد البشرية على التعامل مع الصعوبات والمعيقات التي تتعرض لها المنظمة في ظل المنافسة الشديدة، بالإضافة إلى أن تطبيقات الذكاء الاصطناعي تساعد على تسهيل العمليات والإجراءات الإدارية والتنظيمية والإنتاجية لضمان مستوى عالٍ من الكفاءة والإنتاجية لإداء إدارة الموارد البشرية التي بدورها ستنعكس على الأداء الكلي للمنظمة، وبالتالي الحد من التعقيدات في الإجراءات وتحقيق مستويات عالية من الجودة(منير وعبد اللطيف،2019).

ويذكر عبد النور(2004) أن استخدام تطبيقات الذكاء الإصطناعي في المنظمات، يسهم في المحافظة على الخبرات البشرية المتراكمة بنقلها إلى الآلات الذكية. كما تقوم تطبيقات الذكاء الاصطناعي بالتخفيف عن العاملين الكثير من المخاطر والضغوطات النفسية، وتجعل تركيزهم على أشياء أكثر أهمية في عملهم، فتطبيقات الذكاء الاصطناعي تكون أكثر قدرة على البحوث العلمية، ويسهل الوصول إلى المزيد من الإكتشافات، وبالتالي يُعد عاملاً مهماً في زيادة تسارع النمو والتطور في مختلف الميادين، كما تساعد تطبيقات الذكاء الاصطناعي حلاً قابلاً للتطبيق يعتمد على تقديم منظور جديد فيما يتعلق بالمورد البشري وديناميكية تعلمه، الناتجه عن التفاعل الإفتراضي الذي تنظمه تطبيقات الذكاء الاصطناعي مما يسهل عملية التعلم وتطوير المهارات والقدرات للمورد البشري، لأنها ستكون متاحة عند الضرورة بغض النظر عن الوقت والمكان (Ocana-Fernandez, et al, 2019; Popenici & Kerr, 2017).

دور تطبيقات الذكاء الاصطناعي على تحسين أداء وكفاءة إدارة الموارد البشرية

تُعتبر إدارة الموارد البشرية أحد المجالات الرئيسية لإستراتيجية المنظمة، لأنها تؤثر على تحقيق أهدافها وهذا يعني أنه يجب على مديري الموارد البشرية تطبيق أدوات تكنولوجيا المعلومات الجديدة وطرق تحليل البيانات التي تُمكن من تحسين العلاقات بين الأفراد وتحقيق أهداف المنظمة بشكل أكثر فعالية، وذلك باستخدام تطبيقات الذكاء الاصطناعي التي تساعد في تحسين أنشطة إدارة الموارد البشرية كما وضحها (Kapoor,2010) المتمثلة في:

1. **تخطيط القوى العاملة:** تساعد تطبيقات الذكاء الاصطناعي على فهم اتجاهات القوى العاملة الحالية وتخطيط الاحتياجات المستقبلية، باستخدام البيانات الديمغرافية للموارد البشرية، والتقارير المحددة مسبقاً لتحليل تطور عدد العاملين ومعدلات دوران وتكوين القوى العاملة، وربط نتائج التحليل في تخطيط عدد العاملين، ووضع الميزانية اللازمة لعملية التوظيف وبرامج التدريب والتعلم.
2. **تخطيط ومحاكاة تكلفة القوى العاملة:** من أجل مساعدة ودعم المتخصصين في الموارد البشرية في جميع مهام تخطيط تكلفة القوى العاملة، كذلك تمكين المدراء التنفيذيين للموارد البشرية من تطوير استراتيجيات فعالة وتوفير الوصول لمجموعة واسعة من البيانات المتعلقة بالعمل لدعم التخطيط الدقيق، وتسهيل سيناريوهات التخطيط والمحاكاة، وتمكين المراقبة المستمرة للأداء الفعلي المتعلق بالخطة الموضوعة.
3. **قياس أداء القوى العاملة:** أي قياس العمليات الموحدة للموارد البشرية عن طريق مقارنة القياسات مع مقاييس القياس الخارجية وعتبات التشغيل الداخلية.

4. **تحليلات وقياس عمليات القوى العاملة:** من خلال قياس وتحليل عمليات الموارد البشرية الأساسية مثل كشوف الرواتب وإدارة العاملين وإدارة الوقت والمزايا وتحليل الهياكل التنظيمية والعلاقات وسمات الوظائف والمناصب.
5. **تحليلات وقياس إدارة لمواهب**: وذلك بتحليل مهارات ومؤهلات العاملين وتقييم كفاءة عملية التوظيف وفعالية برامج التعلم الخاصة بالمنظمة والقيام بتقييم مدى نجاح برامج التعاقب في إعداد العاملين لتولي المناصب الرئيسية وضمان استمرارية عمليات الرقابة لتقييم ملائمة أهداف العاملين مع أهداف المنظمة وتحليل فعالية برامج التعويضات للعاملين.
6. **التوافق الاستراتيجي:** للتأكد من أن جميع أنشطة العمل تتماشى وتتلائم مع الأهداف الاستراتيجية للمنظمة ومساعدة فرق العاملين على العمل نحو تحقيق أهداف مشتركة لموائمة أهداف العاملين مع أهداف المنظمة.

ثالثاً: الاستنتاجات

من خلال ما تقدم نتوصل إلى ما يلي:

1. إنّ مفهوم الذكاء الاصطناعي قد لقي قبولاً واستخداماً واسعاً لأنه يتكون من مجموعة من التطبيقات التكنولوجية الذكية والتقنية التي يستخدمها الإنسان في أداء مهامه وتتصف بالدقة العالية والمرونة، فهي تسعى إلى تسهيل أداء مختلف المهام في المنظمة ورفع مستيات جودتها لتحقيق أعلى درجات الكفاءة في العمل.
2. تعتبر إدارة الموارد البشرية المحرك الفعال لتطوير المنظمات في مختلف القطاعات، فهي مجموعة الأنشطة التي تسعى إلى جلب وتوظيف وتنمية العنصر البشري والمحافظة عليه داخل المنظمة، كما وتختص بحركات التوظيف والتدريب والتخطيط والتقييم، لتصبح ثروة منقطعة النظير تحقق للمنظمة ديناميكيتها، وترقى بها في المستقبل باعتبارها إحدى الميزات التنافسية التي تستوجب التثمين والاستثمار.
3. لا بد من التأكيد على ضرورة أن تكون إدارة الموارد البشرية إدارة استراتيجية، وهذا يتطلب وجود نظام معلومات بشرية متطور يتلائم وطبيعة التطورات الحاصلة في كافة المجالات المحيطة بالمنظمة، نظام قادر على مواجهة التحديات والعقبات ويساعد الإدارة على اتخاذ القرارات السليمة سواء المتعلقة منها بإدارة الموارد البشرية أو تلك التي ترتبط بالمنظمة بصورة عامة وبالتالي تقليل التكاليف وتوفير الوقت.
4. أحدثت تطبيقات الذكاء الاصطناعي عدة تغييرات أثرت على الموارد البشرية بشكل كبير من خلال التسهيلات التي وفرتها للعنصر البشري وتطوير وتحسين مهارات وقدرات العاملين في مختلف المجالات، بالإضافة إلى زيادة قدرة الوصول للمعلومات المطلوبة بالسرعة المناسبة، وزيادة قدرة الاتصال الفعال بالرؤساء والمرؤوسين، و زيادة قدرة التحكم في الأنشطة والرقابة عليها بجانب زيادة القدرة على تحقيق أهداف المنظمة.
5. أن تطبيقات الذكاء الاصطناعي من أهم الأنظمة التي تحتاج إليها المنظمة في اتخاذ القرارات الصائبة التي تضمن من خلالها ضمان الاستمرارية والمنافسة، بالإضافة إلى القرارات المتعلقة بتطوير منتجاتها ومواردها البشرية وخططها الاستراتيجية، من خلال كمية ونوعية المعلومات التي توفرها تطبيقات الذكاء الاصطناعي أمام متخذي القرار الذين هم بحاجة دائمة للمعلومة الصحية المنيرة لرؤاهم.
6. إن الربط بين استخدام تطبيقات الذكاء الاصطناعي و معلومات إدارة الموارد البشرية يُعد ركيزة أساسية في تطور الأنظمة الإدارية داخل المنظمة، لأن هناك إدراكاً متنامياً بأهمية وجود نظام معلومات فعال لإدارة الموارد البشرية من أجل توفير المعلومات الدقيقة والمناسبة زمنياً، وهذا يقودنا إلى أن هناك علاقة طردية بين تطبيقات الذكاء الاصطناعي وتحسين أداء الموارد البشرية، أي كلما اتجهت المنظمة نحو استخدام تطبيقات الذكاء الاصطناعي كلما زادت كفاءة الأداء.

رابعاً: النتائج

1. أصبح العمل بتطبيقات الذكاء الاصطناعي ضرورة حتمية في المنظمات من أجل مواكبة تطورات العصر.
2. وضوح الدور الذي تلعبه تطبيقات الذكاء الاصطناعي في إدارة المورد البشري من سرعة إنجاز العمل والابداع فيه.
3. يعتبر تحسين إدارة الموارد البشرية هدفاً أساسياً وجوهرياً لأي منظمة، وهذا لايتم إلا بالاعتماد على أنظمة معلومات مرنة وفعالة كتطبيقات الذكاء الاصطناعي لمواكبة مختلف التغيرات والتطورات.
4. تطبيقات الذكاء الاصطناعي من أهم الأنظمة المعلوماتية الحديثة والمتقدمة تكنولوجيا، وتعمل على تحسين أداء المنظمة وتحقيق أهدافها من خلال تحسين أداء موردها البشري.
5. توفر تطبيقات الذكاء الاصطناعي المعلومة لمتخذي القرار والعاملين في الوقت المناسب، وتضمن الاستغلال الأمثل للموارد المعلوماتية في المنظمة، وهذا يؤدي إلى مرونة إتخاذ القرار بها.

خامساً: التوصيات

1. ضرورة توفر الخبراء والمختصين في مجال الذكاء الاصطناعي داخل المنظمة.
2. تنمية مهارات الموارد البشرية داخل المنظمات للتعامل مع مختلف التطبيقات الحديثة للذكاء الاصطناعي من خلال التدريب والتكوين الكافي لهم في هذا المجال
3. ضرورة تعزيز دور خصائص الذكاء الاصطناعي في المنظمات من خلال تطوير دور تطبيقاته في القيام بمختلف الأنشطة الموكلة إليه، كحل المشكلات، واتخاذ القرارات، وأداء المهام والأنشطة الروتينية والمعقدة.
4. توفر البنية التحتية اللازمة من أجهزة وبرامج وشبكات ومتابعتها باستمرار لضمان صلاحيتها لاستخدام تطبيقات الذكاء الاصطناعي.
5. توفير مخصصات مالية كافية من أجل تطوير كافة تطبيقات الذكاء الاصطناعي الحديثة.
6. تكثيف الدورات التعريفية والتوعوية بأهمية استخدام تطبيقات الذكاء الاصطناعي في المنظمة بشكل عام وفي إدارة الموارد البشرية بشكل خاص.
7. تشجيع البحث العلمي في مجال الذكاء الاصطناعي

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THE ROLE OF APPLYING CORPORATE GOVERNANCE PRINCIPLES IN REDUCING FINANCIAL AND ADMINISTRATIVE CORRUPTION IN JORDAN

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Abstract

Governance is one of the modern terms and organization, given that it is important in achieving a kind of transparency and goals set by government and private institutions. Financial and administrative corruption is also a negative phenomenon on the individual and society because of its social, economic and political effects, especially after a series of various financial crises that Signed in a lot of international organizations. Most of these collapses are due to financial and administrative corruption, so this study came to identify the most important aspects related to the role of applying governance principles in reducing financial and administrative corruption in Jordan and working to shed light on the main principles of governance and the phenomenon of financial and administrative corruption, types, causes and political and economic influences. This research is important by addressing a very important topic, so this research has become important, by addressing it is an important and vital matter that requires concerted efforts by all parties and the use of governance principles in order to stand against corruption and limit its negative effects in the state, whether economic or political effects. And explaining the importance of the regulatory bodies in Jordan and the mechanisms used in combating corruption and presenting proposals that would reform state institutions and keep them away from corruption. The researchers concluded that financial and administrative corruption is a negative phenomenon prevalent in the developing world, especially in Jordan. Financial and administrative corruption is a pest of society Which leads to its destruction, because corruption stops the wheel of development in any society, that financial and administrative corruption has a negative impact on all economic, social and political aspects. And it is important to reduce corruption, and that there are mechanisms to combat financial and administrative corruption in Jordan, for which supervisory bodies have been established in Jordan. Destroy the economy through awareness bulletins and advertisements on social media platforms As long as it is followed by the developed countries that have proven their effectiveness in reducing financial and administrative corruption, the continuous emphasis on the application of governance principles because of their important impact in reducing corruption and conducting more studies and research on the risks of financial and administrative corruption and its negative effects on society economically, socially and politically. The researchers used the descriptive approach in order to reach the clarification of the ideas presented in the study.

Key Words: Governance, Financial Corruption, Administrative Corruption

دور تطبيق مبادئ الحوكمة في الحد من الفساد المالي والاداري في الاردن

الملخص

تعد الحوكمة من المصطلحات الحديثة، والتنظيمية، وذلك باعتبار انها مهمة في تحقيق نوع من الشفافية والاهداف التي تضعها المؤسسات الحكومية والخاصة، كما ويعد الفساد المالي والإداري من الظواهر السلبية على الفرد والمجتمع لما له من آثار اجتماعية واقتصادية وسياسية، خصوصاً بعد سلسلة الأزمات المالية المختلفة التي وقعت في الكثير من المنظمات العالمية. وترجع هذه الانهيارات في معظمها إلى الفساد المالي والاداري، لذا جاءت هذه الدراسة للتعرف على أهم الجوانب المتعلقة بدور تطبيق مبادئ الحوكمة في الحد من الفساد المالي والإداري في الاردن والعمل على تسليط الضوء على مبادئ الحوكمة الرئيسية وظاهرة الفساد المالي والإداري والانواع والمسببات والتأثيرات السياسية والإقتصادية حيث يكتسب هذا البحث أهمية من خلال معالجته لموضوع في غاية الأهمية، لذا بات هذا البحث مهم وذلك من خلال معالجته أمراً مهم وحيوي يحتاج إلى تظافر جهود جميع الأطراف واستخدام مبادئ الحوكمة وذلك من اجل الوقوف بوجه الفساد والحد من آثاره السلبية في الدولة سواء آثار اقتصادية او سياسية . وبيان أهمية الأجهزة الرقابية في الاردن والآليات المتبعة في مكافحة الفساد وتقديم المقترحات والتي من شأنها إصلاح مؤسسات الدولة والنأي بها عن الفساد، وقد توصل الباحثان الى أن الفساد المالي والاداري ظاهرة سلبية منتشرة في دول العالم النامي وخصوصاً في الأردن، الفساد المالي والإداري آفة من آفات المجتمع والتي تؤدي الى تدميره وذلك لأن الفساد يوقف عجلة التنمية في أي مجتمع، ان الفساد المالي والإداري له تأثير سلبي على كافة الجوانب الاقتصادية والاجتماعية والسياسية، للفساد المالي والإداري أسباب عدة منها أهمها ضعف القوانين والأنظمة والقصور في تطبيق هذه القوانين، ان تطبيق مبادئ الحوكمة ضرورية ومهمة في الحد من الفساد، وان هناك آليات لمكافحة الفساد المالي والإداري في الاردن ومن أجلها تم إنشاء جهات رقابية في الأردن، وفي ضوء النتائج التي توصل اليها الباحثان قاما باقتراح مجموعة من الاقتراحات والتي اهمها زيادة نشر الوعي في المجتمع عن آثار الفساد المالي والإداري السلبية التي تدمر الاقتصاد وذلك من خلال النشرات التوعوية والإعلانات بشكل مستمر على منصات التواصل الاجتماعي، استخدام الأساليب الحديثة والتي تقوم باتباعها الدول المتقدمة التي أثبتت فعاليتها في الحد من الفساد المالي والإداري، التأكيد المستمر على تطبيق مبادئ الحوكمة لما لها من أثر مهم في الحد من الفساد والقيام بالمزيد من الدراسات والبحوث حول مخاطر الفساد المالي والإداري وآثاره السلبية على المجتمع اقتصادياً واجتماعياً وسياسياً . وقد قام الباحثان باستخدام المنهج الوصفي من أجل الوصول إلى توضيح الأفكار المطروحة في الدراسة.

الكلمات المفتاحية: الحوكمة، الفساد المالي، الفساد الاداري.

المقدمة

لقد ظهرت في العالم مصطلحات حديثة ومتداولة مثل العولمة وثورة الاتصالات والتكنولوجيا، حيث رافق ظهور هذة المصطلحات تحولات جذرية في حياة الانسان والمنظمات، وإعادة النظر في بعض المفاهيم التقليدية بما يتوافق مع العصر الحديث (الوكيل،2021)، وقد ظهرت من ضمن المفاهيم الحديثة ما يعرف بالحوكمة مما رافقها من مصطلحات أخرى كالشفافية ومكافحة الفساد، حيث تتمحور فكرة الحوكمة حول الأدوات الرقابية المختلفة على أداء المؤسسات سواء كانت حكومية أو خاصة، وقد إكتسب موضوع الحوكمة في الآونة الاخيرة أهمة كبيرة وبالغة في مكافحة الفساد(الدلاهمة، والعساسفة،2021). فأهمية الحوكمة كبيرة جداً في المنظمات العامة، وذلك لأنها توفر هيكلاً تنظيمياً يساعدها في تحقيق أهدافها المنشودة بأفضل السبل، كما أنها تُعد نظام رقابة ذاتي يؤدي إلى سلامة تطبيق القوانين والتشريعات وتجنب الفساد المالي والإداري (الأسمر،2020).

و الفساد ظاهرة من الظواهر السلبية التي تعاني منها معظم دول العالم وخاصة النامية، حيث أضحى الفساد آفة من آفات المجتمع في العالم، حيث لا يمر علينا يوم دون أن تخرج علينا وسائل الإعلام المرئية أو المكتوبة أو حتى مواقع التواصل الاجتماعي بخبر عن هذا المرض الخطير (الشلفان،2021).

حيث أن الفساد ظاهرة منتشرة في جميع دول العالم لا تخص دولة بحد ذاتها، بل وتعرضت لها معظم دول العالم على مختلف العصور والأزمان، فهو ظاهرة من الظواهر الخطيرة التي اقلقت المجتمعات البشرية والحكومات كافة منذ العصور القديمة، وذلك لأن الفساد من الظواهر التي تهدد هذة المجتمعات بالاكتساح على نطاق واسع، وهو آفة ذات جذور لها أبعاد كبيرة منهاالسياسية والاجتماعية والاقتصادية،حيث تظر في كافة المجتمعات ولكن بمستويات ودرجات مختلفة بين مجتمع وآخر، وذلك بناءاً على درجة الوعي الديني والأخلاقي ودرجة الإلتزام بالقيم والمبادئ الأخلاقية والمجتمعية (الصرايرة، 2017).

هذا وتشير نتائج مؤشر مدركات الفساد للعام 2021 أن الفساد يسير ببطء نحو الإصلاح، حيث إكتسب الفساد في المنظمات شرعية خاصة، حيث أن هذه المؤسسات تقوم بمواجهة الفساد بكافة أشكالة بشكل واضح لأنه العقبة الأولى في تقدم عجلة التنمية، حيث يقيس مؤشر مدركات الفساد الصادر عن مؤسسة الشفافية الدولية حجم الفساد في القطاع العام لأكثر من 180 دولة، حيث يصنفها من الأقل فسادا 100نقطة على المقياس إلى الاقل صفر نقطة ، وقد تقدم الأردن درجة واحدة على على سلم مؤشر مدركات الفساد للعام 2020، وحصل على 49 نقطة ، محافظا على نفس الترتيب على مدار عامين ليحت المرتبة الخامسة عربيا و60 عاميا بين الدول 180 الأكثر نزاهة والأقل فساد وفقا لمعايير التقييم (موقع جريدة الغد الاردنية، 9 نوفمبر 2021).

في حين إستضاف الأردن المؤتمر الأول للدول الموقعة على إتفاقية مكافحة الفساد، وقام الاردن بإقرار قوانين جديد للحد ومكافحة الفساد مثل قانون هيئة مكافحة الفساد وقانون مكافحة غسيل الأموال وإشهار الذمة المالية ومركز النزاهة الشفافية، والتي تساهم في الحد من الفساد المالي والإداري ، ونظراً لأهمية تطبيق مبادئ الحوكمة في مكافحة الفساد المالي والإداري حرصت الكثير من المؤسسات ومراكز البحث العالمية على دراسة الحوكمة والآثار الناجمة عن الالتزام بمبادئها في مكافحة الفساد المالي والإداري، فقد جاءت هذه الدراسة لتعرض دور تطبيق مبادئ الحوكمة في الحد من الفساد المالي والاداري في الاردن.

مشكلة الدراسة

تتمثل مشكلة البحث بأن الفساد المالي والإداري مشكلة كبيرة في سوء إدارة أملاك الدولة بل ايضاً بما يترتب عليها من الآثار السلبية على المستوى الاقتصادي والاجتماعي و السياسي، حيث إن الفساد يُحمل الدولة الكثير من التكاليف والأعباء المادية والمعنوية مما يحد من إستقرارها وتحقيق أهدافها في التنمية، لذا يتعين علينا بذل المزيد من الجهود للحد من الفساد المالي والإداري، ولذلك يعتقد الباحثون أن ظاهرة الفساد المالي والإداري في الأردن مشكلة عظمى ويجب مكافحتها والحد منها، لذا جاءت هذه الدراسة لتجيب عن التساؤل الآتي:

- ما دور تطبيق مبادئ الحوكمة في الحد من الفساد المالي والفساد الإداري ؟

أهمية الدراسة

حيث تكتسب الدراسة الحالية أهميتها من خلال معالجته لموضوع مهم يمس قيم المجتمع وتقاليده وأعرافه ويهدد الإستقرار السياسي و الإجتماعي والإقتصادي، لذا باتت هذه الدراسة في سبل معالجتها أمراً حيوياً يمس الفساد المالي والإداري يحتاج إلى تطبيق القوانين والتعليمات وتظافر جهود الأطراف ذات العلاقة للوقوف بوجه الفساد والحد من آثاره السلبية على الوضع الإقتصادي والإجتماعي والسياسي في الدولة.

أهداف الدراسة

1- تسليط الضوء على مفهوم الحوكمة ومبادئها الرئيسية وأيضاً ظاهرة الفساد المالي والإداري وأنواعه ومسبباته وتأثيراته السياسية والإقتصادية.

2- بيان دور تطبيق مبادئ الحوكمة في الحد من الفساد المالي والاداري في الاردن.

3- تقديم مجموعة من التوصيات التي من شأنها إصلاح المؤسسات والنأي بها عن الفساد.

منهجية الدراسة

في إطار الترابط ما بين التفكير في مشكلة الدراسة وأهدافها وأهميتها، وحيث أن البحث ذا أهمية نظرية فإن الباحثين استفادوا من المنهج الوصفي للمعطيات ذات الصلة بالبحث، ومن ثم إستخلاص النتائج والأفكار التي تثبت دور تطبيق مبادئ الحوكمة في الحد من الفساد المالي والإداري في الاردن، بإعتباره أساس مهم في التنمية الإقتصادية والإجتماعية والسياسية.

الإطار النظري

اولاً: الحوكمة

مصطلح الحوكمة على مستوى اللغة العربية لم يتم التوصل إلى مرادف متفق عليه لهذا المصطلح، حيث وجد خمسة عشر معنى في اللغة العربية لتفسير المصطلح وهي (حوكمة الشركة، و حاكمية الشركة، و حكما نية الشركة، و التحكم المشترك، و التحكم المؤسسي، و الإدارة المجتمعة، و ضبط الشركة ، و السيطرة على الشركة ، و المشاركة الحكومية ، و إدارة شؤون الشركة ، و الشركة الرشيدة ، و توجيه الشركة ، و الإدارة الحقة للشركة ، و الحكم الصالح للشركة ، و أسلوب ممارسة سلطة الإدارة) (شنافي،2010).

فقد عرفت موسسة التمويل الدولية الحوكمة بأنها مجموعة القواعد والقوانين والأُسس التي تضبط وتنظم عمل المؤسسات وتحقق الرقابة عليها وتنظم العلاقة بين كافة الأطراف من أجل تحقيق العدالة والشفافية ومكافحة الفساد، أما منظمة التعاون الأقتصادي والتنمية فقد عرفت الحوكمة على أنها مجموعة من العلاقات التي تربط بين القائمين على ادارة الشركة ومجلس الإدارة وحملة الأسهم وغيرهم من أصحاب المصالح، أما وزارة تطوير القطاع العام الاردنية فقد عرفت الحوكمة في القطاع العام على أنها مجموعة من التشريعات والقوانين والتشريعات، التي تؤثر وتشكل الطريقة التي تدار الدوائر الحكومية وذلك من أجل تحقيق أهدافها بكل نزاهة وشفافية وفقاً لآليات للمتابعة والتقييم وفق نضام صارم لضمان كفاءة وفعالية الأداء وتوفير الخدمات الحكومية بعدالة (دليل ممارسات الحوكمة في القطاع العام،2017).

مبادئ الحوكمة في المؤسسات الحكومية

يعتبر مصطلح الحوكمة من أهم المصطلحات التي حظيت بإهتمام الكثير من المؤسسات والمنظمات الدولية خصوصاً التي تعمل في مجال التنمية و الأوساط الأكاديمية، مما أدى إلى ظهور مفاهيم متعددة ومتنوعة لهذا المصطلح المهم، حيث عرَّفه البنك الدولي بأنها الطريقة التي يتم من خلالها ممارسة السلطة في إدارة الموارد الإقتصادية والإجتماعية للدولة ، كما عرَّفه أيضاً البرنامج الإنمائي للأمم المتحدة بأنه ممارسة السلطة الإدارية والإقتصادية والسياسية لإدارة كافة شؤون الدولة، بحيث يشمل جميع الآليات والعمليات والمؤسسات التي يعبر من خلالها المواطنون عن مصالحهم، ويمارسون حقوقهم القانونية ويوفون بالتزاماتهم، حيث إن مفهوم الحوكمة يدور أيضاً حول تفاعل مجموعة من العوامل والآليات التي تؤدي إلى الأسلوب الأمثل لإدارة موارد الدولة وقد تعددت إسهامات المؤسسات الدولية والبحثية في تحديد مبادئ الحوكمة وفقاً لما يلي:

1- المساءلة : وتُعرف بأنها خطوط واضحة للمساءلة القانونية والسياسية والمالية والإدارية للجهات المختلفة المقدمة للخدمات في القطاعين العام والخاص، ومن ثم إنشاء نظام فعَّال للتدقيق الداخلي الخاص بالإجراءات المالية والإدارية فضلًا عن ضرورة وجود نظام فعَّال للطعن يضمن إتاحة سبل قانونية للتظلم وذلك بإنشاء نظام فعَّال لإقرار الذمة المالية بشأن الموظفين الحكوميين المعنيين، وفرض عقوبات ملائمة على حالات عدم الإمتثال، وكذلك إجراء فحص للحسابات التي يطلب فتحها أفراد مكلفون بأداء وظائف عامة هامة بهدف كشف المعاملات المشبوهة والإنصاف في حال عدم اتباع القواعد أو الإجراءات الموضوعة (شريف، 2019).

2- المشاركة : وذلك من خلال المواطنين والمجتمع المدني حيث يتم اعتبارهم أساسيًا فاعلاً في عملية التنمية، وذلك لكونها تساهم في دعم الحكم الديمقراطي، وفتح قنوات التفاعل بين الدولة والمجتمع من خلال مشاركة المواطنين بالمساهمة في عملية إتخاذ القرار ومساءلة صانعي القرار، وتُعرَّف المشاركة بأنها إنخراط وإشتراك كل فاعل من الفاعلين في عمليات تحديد الاحتياجات، إعداد الخطط والبرامج، إعداد الموازنات، اتخاذ قرارات التشغيل اليومية، النواحي المالية، التنفيذ وضرورة قيام الدول بوضع وتنفيذ أو ترسيخ سياسات فعَّالة لمكافحة الفساد وتعزز مشاركة المجتمع، وتجسد مبادئ سيادة القانون، وحسن إدارة الشؤون والممتلكات العامة، و تعزيز مبدأ الشفافية في عملية إتخاذ القرار، وتشجيع مشاركة الأفراد فيها، وضمان تيسير حصول الأفراد على المعلومات المتعلقة بالفساد وتلقيها ونشرها وتعميمها ولكن فى ضوء قيود معينة تضمن مراعاة حقوق وسمعة الآخرين، وكذلك حماية الأمن الوطنى أو النظام العام، والقيام بأنشطة إعلامية وبرامج توعية بمكافحة الفساد (دليل تقييم ممارسات الحوكمة في القطاع العام،2017).

3- الشفافية : بمعنى توافر كل من التعامل النزية والمكتمل وما هو مطلوب من التقارير المالية بحيث ينبغي أن تكون أمينة وأن تقدم صورة متوازنة عن حالة الأعمال،حيث أن نزاهة التقارير تعتمد على نزاهة أولئك الأشخاص الذين يعدونها ويعرضونهابحيث تقدم صورة حقيقية لكافة الأحداث، وإتخاذ كافةالتدابير التي تكفل تعزيز الشفافية في إدارتها العامة من خلال إعتماد إجراءات تمكنَّ المواطنين من الحصول على معلومات عن كيفية تنظيم إدارتها الحكومية (مرسال،2020).

4- سيادة القانون : مفهوم احترام القانون يؤدي الىإمتثال كافة الأطراف سواء كانوا أفرادًا أو مؤسسات حكومية، أو مجتمع مدني للمنظومة القانونية من قوانين أو تشريعات، وبعبارة أخرى يمكن القول إنها درجة التطابق بين سلوكيات وسياسات الفاعلين من حكومة، وقطاع خاص، ومجتمع مدني والقواعد القانونية اتخاذ تدابير تأديبية ضد الموظفين الحكوميين الذين يخالفون مدونات السلوك الوظيفي، وينطبق ذلك أيضًا على مؤسسات القطاع الخاص فى حالة عدم الإمتثال لقواعد وتدابير منع ومكافحة الفساد المنصوص عليها، كما تضمنت أيضًا التأكيد على ضرورة تمكين أجهزة إنفاذ القانون من القيام بدورها في منع ومكافحة الفساد سواء من خلال ضمان استقلالية تلك الأجهزة، أو تعزيز التعاون بين تلك الأجهزة وغيرها من الجهات المعنية سواء الوطنية أو الدولية بهدف ضمان إنفاذ القانون تجاه الأفعال المجرَّمة (مرسال، 2020).

5- مكافحة الفساد : يُعرف الفساد بأنه إساءة استخدام السلطة العامة من أجل تحقيق مكاسب خاصة، وتتعدد صور الفساد لتشمل الرشوة، الابتزاز، المحاباة، إستغلال النفوذ وغير ذلك من أفعال، وتشير الأدبيات إلى وجود علاقة عكسية بين الفساد والديمقراطية، ويتطلب الحد من الفساد وجود بيئة مواتية سياسياً وقانونياً، وقدرات مؤسسية ملائمة، بالإضافة إلى تعزيز مشاركة وسائل الإعلام ومنظمات المجتمع المدني في مكافحته. ومن ثمَّ يقصد بمكافحة الفساد تواجد نظام متكامل وفعَّال لمجابهة الفساد لدى كل فاعل من الفاعلين، ودرجة تطبيق مختلف الفاعلين لهذا النظام (صغيري،2020).

6-العدالة: يُقصد بها درجة تقديم الحكومةوالمجتمع المدني والقطاع الخاص للخدمات بشكل متساوي، وذلك طبقًا للاحتياجات و ذلك لضمان تحقيق مبدأ تكافؤ الفرص بين كافة الموظفين بحيث يكون تعيين وترقية الموظفين الحكوميين بناءً على معايير الكفاءة والجدارة والإنصاف وأهمية وضع برامج تعليمية وتدريبية تمكِّنهم من أداء وظائفهم بشكل صحيح، وترفع وعيهم بمخاطر الفساد الملازمة لأداء وظائفهم، فضلاً عن النظر في وضع معايير ومدونات سلوك للموظفين الحكوميين. (دليل تقييم ممارسات الحوكمة في القطاع العام،2017)

أهداف الحوكمة الرئيسية في المؤسسات الحكومية

هناك عدة أهداف رئيسية في المؤسسات الحكومية كتحسين كفاءة وفعالية إدارة العمليات في المؤسسات وإستغلال جميع الموارد العامة المتاحة وتوظيفها في كافة المجالات التي تحقق العائد والمنفعة على المجتمع، وتعمل على بناء ثقافة مشاركة الأفراد في عملية رسم السياسات وإتخاذ القرارات وتقييم الخدمات والالتزام بالقوانين والأنظمة والتعليمات، و تعزيز الولاء والأنتماء المؤسسي والشعور بالمسؤولية تجاه تحقيق جميع الأهداف الإستراتيجية، و الإستجابة لجميع متطلبات المتعاملين

بجودة ودقة عالية وسرعة في الإنجاز تكون مناسبة لضمان تحقيق رضاهم، بالإضافة إلى العمل على تحقيق ثقافة المساءلة والشفافية وإيجاد أسس واضحة لتحديد مسؤولية الإنجاز والنتائج المرجوة، ومحاربة ومكافحة الفساد بكافة أشكالة وممارساته سواء كان فساد مالي أو فساد إداري، وأيضاً إيجاد قوانين وأنظمة وتعليمات تضمن إلى توثيق جميع الإجراءات والأنظمة وتحديد المسؤوليات والحقوق والصلاحيات في أُطر عمل منهجية واضحة(وزارة تطوير القطاع العام،2017).

ثانياً: الفساد

مفهوم الفساد

لمفهوم الفساد مجموعة من التعاريف والمصطلحات، وذلك بسبب إختلاف المدارس الفلسفية وتنوع أفكار وثقافات وتوجهات رواد هذه المدارس التي تناولت موضوع الفساد المالي الإداري، حيث تم تعريف الفساد بصورة عامة على أنه إنتهاك للقوانين والانحراف عن تأدية الواجبـــــات الرسمية في القطاع العام من أجل تحقيق مكسب مالي شخصي، ويُعرف من خلال مفهومه الواسع على أنه الإخلال بشرف الوظيفة ومنهيتها وبقيمها ومعتقداتها التي يؤمن بها الشخص، وإخضاع المصلحة العامة للمصلحة الشخصية.

وبينت منظمة الشفافية الدولية (1995) أن الفساد سوء إستغلال السلطة لتحقيق مكاسب شخصية، كما يُعرف الفساد بأنه كل عمل يتضمن سوء إستخدام السلطة لأغراض خاصة وكما يُعرف أيضاً على أنه خروج الشخص عن النظام والقانون أو إستغلال غيابهما وتجاوز السياسات والأهداف المعلنة والمعتمدة من قبل السلطة السياسية وغيرها وذلك بهدف تحقيق منفعة شخصية سواء أكانت سياسية أو اجتماعية أو لمجموعة من الأفراد (جونستون، 2008).

أنواع الفساد المالي والإداري

حيث تختلف أنواع الفساد سواء المالي والإداري وذلك تبعاً للزاوية التي تنظر له منها ويختلف طبقاً للحيثيات المرتبطة بها والتي تم ذكرها في خميسي (2016).

1- أنواع الفساد من حيث الحجم

أ- **الفساد الصغير (فساد الدرجات الوظيفية الدنيا):** وهو الفساد الذي يمارس من فرد واحد دون تنسيق مع الآخرين لذا نراه ينتشر بين صغار الموظفين عن طريق استلام رشاوي من الآخرين

ب - **الفساد الكبير (فساد الدرجات الوظيفية العليا من الموظفين):** والذي يقوم به كبار المسؤولين والموظفين لتحقيق مصالح مادية أو اجتماعية كبيرة وهو أهم واشمل وأخطر لتكليفه الدولة مبالغ ضخمة.

2- أنواع الفساد من حيث الانتشار

أ- فساد دولي: هذا النوع من الفساد يأخذ مدى واسعاً عالميا يعبر حدود الدول وحتى القارات ضمن ما يطلق عليها (بالعولمة) بفتح الحدود والمعابر بين البلاد وتحت مظلة ونظام الاقتصاد الحر. ترتبط المؤسسات الاقتصادية للدولة داخل وخارج البلد بالكيان السياسي أو قيادته لتمرير منافع اقتصادية نفعية يصعب الفصل بينهما لهذا يكون هذا الفساد أخطبوطياً يلف كيانات واقتصادات على مدى واسع ويعتبر الأخطر نوعاً.

ب - **فساد محلي:** هو الفساد الذي ينتشر داخل البلد الواحد في منشأته الاقتصادية وضمن المناصب الصغيرة، من الذين لا ارتباط لهم خارج الحدود مع شركات أو كيانات كبرى أو عالمية

أسباب الفساد المالي والإداري

هناك عدة اسباب الأسباب تقف وراء شيوع ظاهرة الفساد الإداري والمالي يمكن تلخيصها بما يلي:

1- **أسباب بيولوجية وفيزيولوجية:** وهي جميع الأسباب التي دافعها الأولي والأساسي هو ما اكتسبه الفرد عن طريق الوراثة وكل ما يتعلق بالخلفية السابقة من حياته وما تركته من آثار على سلوكياته وتصرفاته.

2- **أسباب سياسية**: يقصد بالأسباب السياسية هي غياب الحريات والنظام الديمقراطي، ضمن مؤسسات المجتمع المدني، ضعف الأعلام والرقابة.

3- **عدم استقلالية القضاء**: بعد استقلال القضاء من المبادئ الهامة والأساسية التي تقوم عليها الدولة وتتجلى اهميتها في وجود سلطة قضائية نزيهة تمارس عملها بشكل عادل وتمتلك سلطة الردع للمخالفين للقانون دون تمييز وتعمل على إشاعة العدل بين أفراد المجتمع.

أما في حالة وصول الفساد للسلطة القضائية فان ذلك يمثل نسف للجهود الرامية للحد من هذه الظاهرة وبالتالي ينبغي العمل على تدعيم القضاء والمحافظة على استقلالية ليكون بمثابة صمام الأمان للمجتمع ورادعا قويا لكل من يحاول الاعتداء على حقوق وممتلكات الآخرين.

4- **الأسباب الهيكلية:** تُعزى الأسباب الهيكلية إلى وجود هياكل قديمة للأجهزة الإدارية لم تتغير على الرغم من التطور الكبير والتغير في قيم وطموحات الأفراد، هذا كان الأثرة الكبير في دفع العاملين إلى اتخاذ مسالك وطرق تعمل تحت ستار الفساد الإداري بغية تجاوز محدودية الهياكل القديمة وما ينشأ عنها من مشاكل تتعلق بالإجراءات وتضخم الأجهزة الإدارية

المركزية.
5- أسباب اجتماعية: يتمثل بالحروب وأثارها ونتائجها في المجتمع والتدخلات الخارجية، الطائفية والعشائرية والمحسوبيات، القلق الناجم من عدم الاستقرار نتيجة الأوضاع والتخوف من المجهول القادم لذا استدعى. جمع المال بأي وسيلة لمواجهة هذا المستقبل والمجهول الغامض

مظاهر الفساد الإداري والمالي

لاشك إن المكاسب المادية والمعنوية التي يجنيها المفسد هي التي تدفعه لأرتكاب مثل هذه الأفعال والتي قد تأخذ واحد أو أكثر من مظاهره التالية :-

1 . الرشوة وتعني حصول الشخص على منفعة تكون مالية في الغالب لتمرير أو تنفيذ إعمال خلاف التشريع أو أصول المهنة (المحمدي، 2012).

2 . المحسوبية أي امرار ما تريده التنظيمات (الأحزاب أو المناطق والأقاليم أو العوائل المتنفذة) من خلال نفوذهم دون استحقاقهم لها أصلاً (السكارنة، 2011)

3 . المحاباة أي تفضيل جهة على أخرى بغير وجه حق كما في منح المقاولات والعطاءات أو عقود الاستئجار والاستثمار (السكارنة، 2011)

4. الوساطة أي تدخل شخص ذا مركز (وظيفي أو تنظيم سياسي) لصالح من لايستحق التعيين أو إحالة العقد أو إشغال المنصب أو ... الخ (نضيف، 2012)

5 . الابتزاز والتزوير لغرض الحصول على المال من الأشخاص مستغلاً موقعه الوظيفي بتبريرات قانونية أو إدارية أو إخفاء التعليمات النافذة على الأشخاص المعنيين كما يحدث في دوائر الضريبة أو تزوير الشهادة الدراسية أو تزوير النقود (الشديدي، 2010).

6 . نهب المال العام والسوق السوداء والتهريب بأستخدام الصلاحيات الممنوحة للشخص أو الاحتيال أو استغلال الموقع الوظيفي للتصرف بأموال الدولة بشكل سري من غير وجه حق أو تمرير السلع عبر منافذ السوق السوداء أو تهريب الثروة النفطية . (ياسين، وحسين، 2021)

7 . فساد يتقاطع مع الأنظمة والقوانين المتعلقة بنظام العدالة وحقوق الملكية والتسهيلات المصرفية والائتمانات وكذلك التمويل الخارجي. (ياسين، وحسين،2021)

8 . الفساد في بيئة المجتمع مثل التلوث ودخان المصانع (وكانت للدول الصناعية الكبرى الأثر الأكبر في ظاهره الاحتباس الحراري) التي يمر بها العالم حالياً .

9 . التباطؤ في إنجاز المعاملات وخاصة المهمة والمستعجلة كمعاملات التقاعد والجنسية وجواز السفر ووثائق تأييد صحة صدور الشهادات أو الكتب الرسمية (ياسين، وحسين،2021)

ثالثاً: دور الحوكمة في مكافحة الفساد

للحوكمة دور أساسي وجوهري في مكافحة الفساد في المؤسسات سواء كان فساد مالي أو فساد إداري باعتبارها خط الدفاع الأول ضد أي فساد، ويتضح لنا هذا من خلال الدور الذي تقوم به الحوكمة ومبادئها في الحد من الفساد الذي بات يمثل جريمة في حق الإنسانية، ومدى الإرتباط والتكامل بين مبادئ الحوكمة بعضها البعض لضمان النزاهة والموضوعية للمؤسسات التي تطبقها لأنها توفر نظام مراقبة ومتابعة يؤدي إلى سلامة التطبيق الفعال للأنظمة، وبالتالي تجنب حالات الفساد(الشريف،2020). كذلك تساهم الحوكمة في التوعية بأضرار الفساد، وتؤدي زيادة الشفافية وإتاحة المعلومات وتداولها على نطاق واسع، تعزيز مشاركة كافة أطراف المجتمع في مكافحة الفساد وتحقيق أعلى درجات المساءلة المجتمعية والسياسية، وتحقيق سيادة القانون والإمتثال لقواعده، وبالتالي زيادة كفاءة وفعالية السياسات والإستراتيجيات في الحد من الفساد، كما أن الالتزام يؤدي إلى ترسيخ القواعد لنظام فعَّال في الحد الفساد ويستجيب لتطلعات كافة المواطنين و المساهمة في تعزيز قيم النزاهة والشفافية من أجل أداء أفضل في الوظيفة العامة والحفاظ على المال العام، و العمل على وضع ومتابعة تنفيذ إستراتيجية وطنية ثابتة من أجل الحد من الفساد وذلك بالمشاركة مع الهيئات والأجهزة المعنية الأخرى.

الاستنتاجات

وقد توصل الباحثون الى ما يلي:

1- أن الفساد المالي والاداري ظاهرة سلبية منتشرة في دول العالم النامي وخصوصاً في الأردن، بسبب تردي حالات سوء توزيع الدخل من خلال استغلال أصحاب النفوذ، مما يتيح لهم السيطرة على الجانب الأكبر من المنافع التي تقدم لهم وهذا بدوره يؤدي إلى توسيع الفجوة بينهم وبين بقية أفراد المجتمع.

2- إن الفساد المالي والإداري آفة من آفات المجتمع والتي تؤدي الى تدميره وذلك لأن الفساد يوقف عجلة التنمية في أي مجتمع، بسبب تأثيره السلبي على كافة الجوانب الاقتصادية والاجتماعية والسياسية، وهذا يؤدي إلى تدني كفاءة الاقتصاد العام، وإضعاف مستوى الجودة، بسبب الهدر الذي يزيد من تكلفة الإنفاق الرشيد.

3- للفساد المالي والإداري أسباب عدة منها أهمها ضعف القوانين والأنظمة والقصور في تطبيق هذه القوانين، بالإضافة إلى ضعف البعد الأخلاقي والديني لدى الأفراد.

4- إن تطبيق مبادئ الحوكمة ضرورية ومهمة في الحد من الفساد، لأنه لايمكن مكافحة الفساد بالشعارات والانفعالات وإنما من خلال استراتيجية واضحة، لذا لابد من إرادة سياسية ومجتمعية قوية ناتجة من إيمان عميق بأهمية التصدي لظاهرة الفساد.

5- هناك ارتباط وتكامل بين مبادئ الحوكمة بعضها البعض ودورها في الحد من الفساد المالي والإداري، وهذا يقودنا إلى أنه كلما زاد تطبيق مبادئ الحوكمة كلما تمت السيطرة على الفساد والتقليل من آثاره.

التوصيات

وفي ضوء النتائج التي توصل اليها الباحثون قاموا بإقتراح مجموعة من الاقتراحات والتي من أهمها

1- زيادة نشر الوعي في المجتمع عن آثار الفساد المالي والإداري السلبية التي تدمر الاقتصاد وذلك من خلال النشرات التوعوية والإعلانات بشكل مستمر على منصات التواصل الاجتماعي

2- إستخدام الأساليب الحديثة والتي تقوم باتباعها الدول المتقدمة التي أثبتت فعاليتها في الحد من الفساد المالي والإداري

3- التأكيد المستمر على تطبيق مبادئ الحوكمة لما لها من أثر مهم في الحد من الفساد المالي والإداري

4- القيام بالمزيد من الدراسات والبحوث حول مخاطر الفساد المالي والإداري وآثاره السلبية على المجتمع اقتصادياً واجتماعياً وسياسياً.

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THE DEVELOPMENT OF PRIVATE HOUSING SCHEMES TO ADDRESS THE HOUSING PROBLEM: A CASE STUDY OF ISLAMABAD

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Abstract

Housing is a fundamental human need. Governments worldwide are responsible for providing suitable housing for their people. Due to the rapidly increasing population and high rate of urbanization, housing demand is also increasing in developing countries. Like other developing countries of the region, the housing situation in Pakistan is not encouraging as the gap between demand and supply of affordable housing is becoming bigger and bigger. The housing policies have not been able to provide a suitable solution for this deplorable housing dearth. The previous National Housing Policy of 1986 was revised in 2001 to make the supply of affordable housing more accessible for low-income people. Islamabad Master Plan was approved in 1960 and the city was developedin light of the provisions of this Master Plan. According to Capital Development Authority (CDA) Ordinance 1960, this is the responsibility of CDA to acquire land to provide housing in Islamabad. However, the pace of residential development was slow and the demand for housing increased rapidly, due to which the emergence of slums was observed in the capital.CDA prepared detailed bye-laws for regulation of private housing schemesand these byelaws were called"Modalities & Procedures." This paper explains how the Modalities and Procedures of CDA have successfully regulated the development of private housing schemes in Islamabad.

Keywords: Housing Schemes, Master Plan, Development Works, Zoning Regulations

INTRODUCTION

Globally, shelter is considered the primary necessity of humans to live and nurture. (UNHABITAT 2012) All the states are responsible for providing shelter for theirresidents whoare affordable and sustainable. Developing countries worldwide are facing a shortage of affordable housing (UCLG 2019). The population of Pakistan is increasing at an alarming rate, and housing facilities are not being provided as per requirement. The prices of the houses have become out of the reach of the poor people (Hasan2018;Govt. of Pakistan 2001).

The Capital of Pakistan is Islamabad, and its development was started in 1960 after the approval of the master plan. Capital Development Authority was established to develop the Capital City under CDA Ordinance 1960. Unfortunately, due to the slow pace of land acquisition, the development of residential sectors was very slow. In 1992, CDA promulgated the Islamabad Capital Territory Zoning Regulation and divided Islamabad into five Zones. According to the Zoning Policies, Private Sector was encouraged to develop housing schemes in Zone-2 and 5 of Islamabad under the Master Plan of Islamabad.The Master Plan of Islamabad is shown in Figure 1.



Figure 1: Master Plan of Islamabad amended in 1992
Source: Capital Development Authority, Islamabad 2018

According to Planning Wing CDA, in 2010, in the light of the orders of the Supreme Court of Pakistan, CDA again made amendments in the Master Plan of Islamabad and Zone-4 was further subdivided into 4 sub-zones and housing and other facilities were also allowed in this zone. Figure 2 shows the Plan showing sub-zones of Zone-4 of Islamabad:

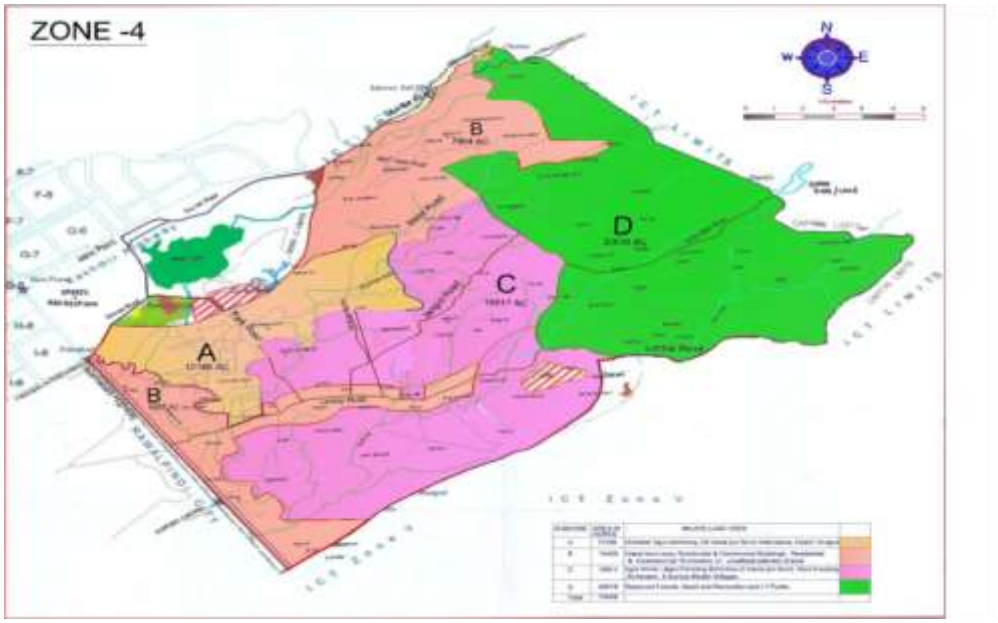

Figure 2: Sub Zoning Plan of Zone-4, Islamabad
Source: Capital Development Authority, Islamabad 2018.

Literature Review

The private sector has had a significant role in housing provision since the early 1980s. In the beginning, the government planned the housing schemes under various programs. However, Lahore Development Authority (LDA) took the initiative to framebye-lawsto regulatehousing schemes in the private sector under the LDA Act 1975. The private sector was encouraged to purchase land and seek approval of the authority, in two stages, upon submission of certain documents. Thus 73 housing schemes could meet LDA requirements for approval (Anjum& Hameed (2007). The National Housing Policy 2001 specifiedrationalizing and simplifying the planning and building code standards and procedures in vogue.
Bajwa, Ahmed &Khan (2005) observed that pace of construction of buildings in Government housing schemes is faster than the private housing schemes because a heavy surcharge is levied on late construction. Zaman&Baloch (2011) found that in four decades after 1970, private developers and cooperative societiesdeveloped 231 housing schemes over an area of 9,288 hectares. DefenceHousing Authority Lahore has developed9,000 hectares of land in 9 phasesupto 2010 and LDAdeveloped 14 regular schemes on 6,123 hectares for the same period.Mohsin, Jamal & Khan (2013) found 102 illegal housing schemes in Lahore, 73 in Islamabad and 31 in Bahawalpur.Zafar (2013) discussed that on the analogy of LDA, other development authorities in Punjab like Faisalabad Development Authority (FDA) and Rawalpindi Development Authority also prepared by-lawsto regulate private housing schemes. The Capital Development Authority (CDA) promulgated the ICT Zoning Regulation 1992 and, under these regulations, introduced the by-laws for the development of private housing schemes in 1993.Later on various minor amendments were made by CDA in these regulations in 2019.

Although the approval of private housing schemes was in practice in Punjab, each city has its bye-laws. In 2010 Government of Punjab introduced bye-laws for private housing schemes called Punjab Private Housing Schemes and Land Subdivision Regulations 2010 (PPHS & LSR2010). Later on, some amendments were made to these regulations in 2015. The important aspects of these regulations have been discussed below for comparison facilities.

To process a housing scheme, each authority requires different documents to verify ownership, the status of the organization and type of the plan, etc. detail is given below:

Islamabad	Punjab
i. Computerized National Identity Card (CNIC) of the Developers ii. Registration of the Company iii. Financial Statement of the Company iv. Survey plan of the site. v. Layout plan of the scheme. vi. Duly verified Land ownership documents, including Fard, Aks, NEC &Girdawary.	i. Computerized National Identity Card (CNIC) of the Developer. ii. Certified copy of the company's certificate of registration or the cooperative society, if applicable. iii. Location plan of the proposed scheme. iv. Ownership documents of proposed land v. Financial statement of developer including Bank Statement, assets, etc.

Source: i. Modalities and Procedures for Development of Private Housing Schemes in Islamabad.

i. Punjab Private Housing Schemes & Land Sub-Division Rules 2010

As per Modalities and Procedures of CDA for Development of Private Housing Schemesand the Government of Punjab, the land use planning standards adopted by CDA and in Punjab are almost the same as shown in the following table:

S.	Land Use	CDA Standard	Punjab Standard

No			
1	Residential	Max.55%	Not fixed
2	Open/Green Spaces/Parks	Min. 15% in Zone-4 & 8% in other Zones	Min. 7%
3	Roads/Streets	Min. 26%	Not fixed
4	Grave yards	Min. 2%	Min. 2%
5	Commercial	Max. 5%	5%
6	Community	Min. 4%	5%-10%

Source: i. Modalities and Procedures for Development of Private Housing Schemes in Islamabad.

ii. Punjab Private Housing Schemes & Land Sub-Division Rules 2010

There are three stages in the approval of a housing scheme in CDA as under:

i. Approval of Layout Plan (LOP)
ii. No Objection Certificate (NOC)
iii. Completion Certificate

Planning Wing CDA by March 2021 hadprocessed sixty-two (62) housing schemes and only thirty-four (34) couldproceed for seeking No Objection Certificate. The summary of private housing schemes showing their latest status has been given in the following figure 3

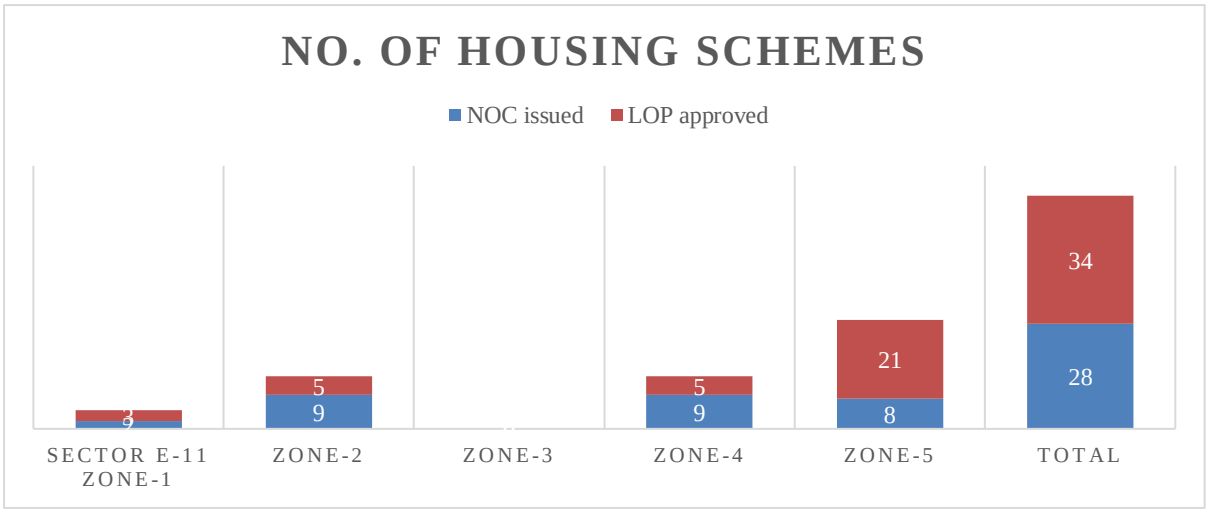

Figure 3: Status f housing scheme approved
Source: CDA, Islamabad, 2021.

Discussion

The researcher conducted a questionnaire survey of the residentsin private housing schemes in Islamabad, which transpired that:

i.A vast majority of the residents enjoy communityfacilities like Parks and Masjid, whereas playgrounds, community centers, schools and health facilities are insufficient.
ii. The private developers have provided services like paved roads, water supply, sewerage, drainage, sui gas, electricity and water supply for the residents' facility.
iii. A divided opinion has been observed on the residents' satisfactionwith the private housing schemes.
iv. Majority of the residents of the private housing schemes are not aware of the approval of the scheme's plan from the Capital Development Authority.

Capital Development Authority registers the Consulting Town Planners to provide consultancy services in the capital area for private housing schemes. A questionnaire was prepared to know the opinion of the town planners regarding the knowledge of CDA Regulations. All of these town planners have thoroughly read the M&Ps. Among these town planners, only 50% of the Town Planners had ever prepared a housing schemefor submission in CDA. More than 85% of them identified discrepancies in M&Ps. It was unanimously opined that documents required to submit housing schemes are adequate. However, more than 70% of experts expressed concerns aboutthe adequacy of space standards. The majority of the town planners declared thatthe procedure for issuance of NOC by CDA is not easy. About 50% of the town planners think that existing M&Ps impede the growth of the private housing scheme.

A questionnaire was prepared to know the opinion of these scheme developers about the impact of CDA Regulations on the development of private schemes. The opinion of the developers has been given as under:

i. Almost50% of the housing schemes donot comply with CDA planning standards in letter and spirit. However, the majority of approved housing schemes have mortgaged plots with CDA.

ii. Regarding amendments in the Modalities and Procedure, it was divided opinion of the scheme developers regarding complete awareness of CDAModalities and think that these modalities need some amendments.

In Islamabad Capital Territory, three departments regulate private housing schemes, including:

i. Capital Development Authority (CDA)
ii. Cooperative Societies Department
iii. Security Exchange Commission of Pakistan (SECP)

To regulate the business of private housing schemes in the Islamabad Capital Territory (ICT) area, CDA undertook the number of measures as mentioned below

i. CDA has made amendments in the M&Ps to remove the bottlenecks in the larger public interest, including the imposition of heavy fines on violations of terms and conditions of the approval granted by the authority.
ii. CDA Website has been upgraded. The status of approved and unapproved housing schemes has been uploaded for facility and awareness of thegeneral public.Public queries and complaints are addressed through letters, e-mails, the CDA website, and telephone.
iii. The scheme developers have been warnedrepeatedly through notices, CDA Website, and print media to follow the approved layout plan strictly.
iv. The monitoring of the development works of the schemes is made to ensure the development as per the approved plan. Presently, the housing societies directorate staff is less than the approved strength. The vehicles are also not provided to this Directorate as per sanctioned strength, due to which hardships are being faced in monitoring the schemes.

The Cooperatives Department ICT: regulates cooperative Societies in Islamabad

i. Conduction of elections to select management Committees.
ii. Conduction of annual audit of their accounts.

iii. Monitoring business of the Management Committees.

According to the Circle Registrar Cooperatives Department, ICT, Islamabad, the registration of the societies was started in 1972. At present, 24 Cooperative Housing Societies were registered and a vast majority of them were registered before 1990.

Security Exchange Commission of Pakistan is a Federal Government departmentestablished to register private companies under the umbrella of Companies Ordinance 1984.Although the Commission registers the private housing scheme developers, but cannot monitor their business.

Conclusions

It is concluded from the above research that the developers start booking of plots and execution of development work before issuance of NOC by CDA because obtaining NOC and Completion Certificate from CDA is a lengthy process. Moreover, the developers do not follow the space standards and hardly provide parks/open spaces according to approved LOP. This suggests improvement in the M&Ps

The study reveals that no department keeps checking on the business of the housing scheme developers; therefore, they are freely selling the plots in the open market without taking care of the Layout Plan. This suggests an amendment in the Companies Ordinance to strengthen the SECP and safeguard the huge public investment. Although the Cooperatives Department looks after Cooperative Societies' financial and administrative matters under the above said Act. Still, they also sell plots among their members before seeking approval from the authority. The poor monitoring of development works of the private schemes by CDA encouraged the private developers to change the LOP or even develop the scheme without seeking any approval from the authority. The residents of the private housing schemes have shown their concern over illegalities committed by the scheme developers.

The detailed master plan of Zone-5 was to be prepared by the CDA, and approval of private housing schemes was to be started after that. Due to this illegality, ahaphazard growth of legal and illegal residential settlements occurs.

Recommendations

In the light of conclusions drawn in this research, the following recommendations are proposed to resolve the deficiencies of Modalities and Procedures for the development of private housing schemes in Islamabad: -

i. CDA should confidence all the stakeholders and make amendments to remove discrepancies in the prevailing regulations.
ii. The M&Ps should be comprehensively elaborate on the procedure for approval of the housing schemes. Every stage of the plan approval should be notified in the Modalities and Procedures with due course of time for action restraining both the CDA and the scheme developer/organizer/sponsors to avoid undue procedural delay.For transparency, the approval procedure should be uploaded tothe CDA website.
iii. Provision of higher-order facilities is necessarily required in Zone-5 because the private scheme developers only provide the facilities upto the extent of the individual scheme. CDA should provide such facilities as a trunk road, trunk infrastructure, Universities, Whole sale markets, Zonal level parks and playgrounds, etc.

iv. The private housing scheme developers should be required to provide a list of their allotties/members to CDA so that booking plots in violation of the approved LOP may be discouraged.

v. Thelayout plans of approved housing schemes should be exhibited onthe CDA website indicating the total area of the scheme, location of the scheme, total saleable plots, and other community facilities so that the general public may be aware of the scheme's status and the plot before entering into any transaction.The approved layout plans should also be displayed at the site and in the offices of the scheme developers/sponsors.

vi. The regulatory bodies should be empowered through amendments in respective Acts/Ordinances, and penal clauses should be revised and implemented without discrimination.

vii. The watch and ward system to monitor the development of private housing schemes should be strengthened at various stages, i.e., at the time of application, at the time of layout of the scheme, during the layout of services and roads.The building control of Zone-2, 4 & 5 in and outside the private housing schemes should invariably rest with CDA to avoid illegal changes in the approved layout plan and protect the rights of the residents of that scheme and control the unplanned development and mushroom growth and urban sprawl in the peripheral area of the city.

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GENDER DIFFRENCES IN IT ENTREPRENEURSHIP: COMPARING ENTREPRENEURIAL INTENTION/ BEHAVIOR OF WOMEN AND MEN - EVIDENCE FROM MOROCCO

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Abstract

If the managerial economics has dominated the growth dynamics for several decades, the economic crisis of the mid-1970s with the resulting restructuring, the refocusing of the large companies on their core businesses, the relocations to new emerging countries, the rising power of the services sector and the technological developments that marked the last quarter of the twentieth century put the importance of the entrepreneurial function at the forefront of the global economy[1].
In such a situation, Morocco, as the other developping countries, following the recommendations of the World Bank, implements guidance to promote the entrepreneurial practices that represent a source of value creation and wealth.
Currently, the number of women entrepreneurs starting business is increasing. They manage between one-quarter and one-third of all companies in the formal economy around the world. In Morocco, at present, women entrepreneurs represent 10 to 12% of the total number of entrepreneurs with low representation in the sector of new technologies[2]. This is a small number given the great changes in the country.
The objective of this paper is to describe the entrepreneurial behavior of women entrepreneurs in each project phases, namely the pre and post implementation, particularly in the sector of ITs. For a better interpretation of the results, we carried out a comparative study with the male entrepreneurship in order to evaluate the impact of the gender on the entrepreneurial behavior in these two phases of a project.

Key words: Entrepreneurship, Women Entrepreneurship, gender approach, comparative study, NICT Sector Morocco.

[1] Jean-Claude MARCOURT, Entrepreneuriat et création d'entreprises : Facteurs déterminants de l'esprit d'entreprise, Edition De Boeck, 2009,

2 According to a study conducted between 2014 and 2015, by Bureau International de Travail (BIT), in partnership with the Ministry of Employment and Social Affairs and the financial support of Global Affairs Canada.

EUROPEAN UNION FUNDING DURING A CORONAVIRUS PANDEMIC

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Abstract

There is no doubt that one of the top priorities for any state is the health and security of its citizens. The coronavirus crisis was a significant shock to the European and global economies. In fact, this is why European Union Member States introduced budgetary, liquidity-support, and other national policy measures to increase national health systems' capacity and help citizens and sectors particularly affected by the impact of the pandemic. In the epidemiological crisis described, it was imperative to protect sectors critical to the economy, assets, technology, and infrastructure and, most importantly, protect jobs and workers. In this regard, the research was intended to assess the impact of the COVID-19 outbreak on the economy and jobs in the European Union during this pandemic. As a result, they showed the impact of EU measures which helped many entrepreneurs in various countries avoid bankruptcy. Through the Coronavirus Response Investment Initiative and under shared management with the Member States, the European Union provides ongoing liquidity to businesses affected by the crisis. In addition, the Commission has made available up to EUR 8 billion in funding from the European Investment Fund for 100 000 small businesses affected by the crisis.

Keywords: COVID 19; EU Funding; Crisis Management; Health Systems, Global economy

THE IMPACT OF THE TAX GOVERNMENT ON REDUCING TAX EVASION IN JORDAN

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Abstract

The tax administration plays an important role in the state in enacting legislation and laws and increasing tax compliance, Through the application of tax governance standards With more transparency and credibility, and thus an increase in tax revenues, It is both a preventive and a deterrent approach in order to address distortions in the tax collection process and reduce the risk of tax evasion, From this point of view, this study came to shed light on the role that tax governance standards play in reducing tax evasion in Jordan. Through the theoretical side, the study reached a set of results, the most important of which is the tax administration's commitment to the application of government tax standards that increases the confidence and credibility of taxpayers and thus will limit tax evasion and increase the state's tax revenues, The study recommended obligating the tax administration in Jordan to abide by tax government standards, The researchers followed the descriptive approach to clarify the ideas presented in the research by reviewing all previous studies related to tax governance in reducing tax evasion in Jordan, and then extracting the results and recommendations that were reached.

Keywords: Tax government, Tax evasion, Tax administration, Jordan.

أثر الحكومة الضريبية في الحد من التهرب الضريبي في الأردن

الملخص

تلعب الإدارة الضريبية دوراً مهماً في الدولة في سن التشريعات والقوانين وزيادة الالتزام الضريبي, من خلال تطبيق معايير الحكومة الضريبية بشفافية ومصداقية أكثر وبالتالي زيادة في الإيرادات الضريبية, فهي تعتبر نهجًا وقائيًا ورادعًا في نفس الوقت من أجل معالجة التشوهات في عملية التحصيل الضريبي وتقليل خطورة التهرب الضريبي, ومن هذا المنطلق جاءت هذه الدراسة إلى تسليط الضوء على الدور الذي تؤديه معايير الحوكمة الضريبية في الحد من التهرب الضريبي في الأردن, وقد توصلت الدراسة من خلال الجانب النظري إلى مجموعة من النتائج أهمها التزام الإدارة الضريبية في تطبيق معايير الحكومة الضريبية يزيد من الثقة والمصداقية للمكلفين وبالتالي سوف يحد من التهرب الضريبي وزيادة الإيردات الضريبية للدولة, وأوصت الدراسة إلى أن تكون الإدارة الضريبية في الأردن ملزمة بالالتزام بمعايير الحكومة الضريبية, واتبع الباحثان المنهج الوصفي لتوضيح الأفكار المطروحة في البحث من خلال الاطلاع على كافة الدراسات السابقة المتعلقة بالحوكمة الضريبية في الحد من التهرب الضريبي في الأردن, ومن ثم استخلاص النتائج والتوصيات التي تم التوصل لها.

الكلمات المفتاحية: الحكومة الضريبية, التهرب الضريبي, الإدارة الضريبية, الأردن.

المقدمة:

مما لا شك أن الضرائب تحتل أهميه كبيره في الدولة لما تشغله من مصادر أساسي في تمويل خزينة الدولة وتغطية نفقاتها، إذ تلعب دوراً بارزاً في الاقتصاد حيث تعتبر أداة من أدوات السياسة الاقتصادية والاجتماعية لعملية التحصيل في الأردن، في المقابل نجد ان التهرب الضريبي هي مشكله تعاني منها جميع الدول المتقدمة والنامية، حيث تقوم الشركات بالتهرب من دفع الضريبة لزيادة إرباحها وذلك من خلال إتباع طرق غير مشروعة واحتيالية، لذلك كان لا بد من التطبيق الجيد للإدارة الضريبية لمجموعة من المعايير الضريبية من الشفافية والعدالة والمصداقية التي بدوها سوف تحد من هذه الظاهرة لأنها سوف تضمن تحصيل الضرائب بشكل صحيحة ووفقاً للقوانين والتشريعات الضريبة التي وضعتها (عوادية, 2021)

مشكلة الدراسة:

تتمثل مشكلة البحث بان المكلفين في الأردن يقومون في علمية التهرب من دفع الضريبية وذلك لزيادة ارباحهم, اذا لا بد من وجود إدارة ضريبية تسن قوانين وقواعد وتشريعات وعقوبات قوية للتقليل من هذه الظاهره من خلال تطبيق معايير الحوكمة الضريبية المتعلقة بالشفافية العدالة والمصداقية للمساعد في الحد من التهرب الضريبي.

أهمية البحث:

تعد الحوكمة الضريبية من المواضيع المهمة لمعالجة التشوهات في القوانين والتشريعات الضريبية وايضاً تغليض العقوبات لذ تكمن أهمية البحث في تطبيق معايير الحوكمة الضريبية في الحد من ظاهره التهرب الضريبي, حيث ان التهرب الضريبي في الأردن يشكل عائق في تحقيق مشاريع الدولة الاقتصادية والاجتماعية.

اهداف البحث:

1- توضيح مفهوم التهرب الضريبي والضريبية وتاثيره على اقتصاد الدولة.
2- تسليط الضوء على ظاهرة التهرب الضريبي ومعرفة أسبابه وعقوباته.
3- التطرق الى مفاهيم الحوكمة الضريبية وأهدافها ودور الإدارة الضريبية في مكافحة التهرب الضريبي
4- ابراز الدور الفعال التي تلعبة الحوكمة الضريبية في الحد من التهرب الضريبي في الأردن.

منهجية البحث:

اعتمد الباحثان على الجانب النظري المتعلق بالكتب والدراسات السابقة التي تحدثت عن اثر الحوكمة الضريبية على التهرب الضريبي, لذا تم الاعتماد على المنهج والوصفي لإستخلاص النتائج والأفكار التي تثبت اثر الحوكمة الضريبية في الحد من التهرب الضريبي في الاردن

الاطار النظري:

المطب الأول الحوكمة الضريبية

مفهوم الحكومة الضريبية:

هي مجموعة الأسس والقواعد التي تسمح بمراقبة أداء الإدارة الضريبية ، وحماية أموال الدولة من الضياع، وفرض المساءلة على جميع الموظفين في حال مخالفة هذه القواعد وذلك لضمان ذلك(عوادية,2021)

وعرفها العبيني والمومني (2018) بانها مجموعة من والإجراءات والقواعد التي تتبعها الإدارة الضريبية لضمان سير العمل وتحسينه وزيادة نسبة الثقة بين عملائها لتحقيق العدالة وتوفير الشفافية وتفعيل الرقابة والإبلاغ عن المساءلة لجميع الموظفين وذلك بهدف تحقيق أهداف التشريع الضريبي وزيادة الثقة في النظام الضريبي والاقتصادي للدولة.

ويعرفها بلهادي وقدي (2018) بانها المهام والمسؤوليات الجديدة لإدارات الضرائب في تحقيق المتانة والصلابة في الرقابة الضريبية وتحقيق الشفافية والمصداقية في نقل المعلومات الضريبية للمكلفين.

اهداف الحوكمة الضريبية:

تسعى الحوكمة الضريبية لتحقيق الأهداف التالية (ام الخير وادم, 2019):

1- قدرة الإدارة الضريبية على ممارسة السيطرة وفرض الرقابة على الأداء المحاسبي والمالي للشركات لان هذه الرقابة تهم المساهمين وأصحاب المصالح، وذلك لتوفير الإيرادات الضريبية من الخسارة وتعظيم الربح الضريبي ، وكذلك تجنب السياسات التي تؤدي إلى انهيار الشركة.
2- قدرة المشرع الضريبي على التوحيد في جوانب التصميم الضريبي وتعزيز الثقة بين مختلف الأطراف المعنية, بحيث يمكن أن يمنع الإدارة الضريبية في تجنب إساءة استخدام سلطاتها وتحقيق توازن معقول بين شدة المخالفة ومدى ملاءمة العقوبة، سواء في حالات مخالفة للتشريعات أو التهرب الضريبي.
3- عدالة السياسة الضريبية من حيث المعاملة الضريبية بين دافعي الضرائب والإدارة الضريبية، وكذلك بين دافعي الضرائب أنفسهم.
4- تشجيع مسك سجلات محاسبية منتظمة وزيادة الوعي الضريبي.
5- يتم إدخال المنهجيات العلمية والإجراءات التكنولوجية المتطورة.

حوكمة الإدارة الضريبية ومكافحة التهرب الضريبي (عادل، 2020)

أصبحت قضية حوكمة الإدارة الضريبية مصدر قلق كبير لكل من البلدان المتقدمة والنامية، كما يتضح من سياسات الإصلاح العديدة والمتنوعة التي تنتهجها تلك البلدان، والتي تهدف جميعها إلى معالجة المشكلات التي تواجهها الإدارة الضريبية ، والتي لها أهمية كبيرة. التأثير على فعاليتها وكفاءتها في الاطلاع بمسؤولياتها, حيث ارتفع تحصيل الضرائب بنحو 50٪ في موريتانيا بين عامي 2012 و 2014 نتيجة للتغييرات في تعزيز إدارة الموارد العامة. "المفهوم القائل بأن الإدارة الضريبية تعمل بشكل جيد أمر ضروري لدعم العمليات التجارية الرسمية، وجذب الاستثمار، وتعزيز التقدم الاقتصادي، فيما يُنظر إلى إدارة الضرائب على الشركات على أنها عائق رئيسي أمام ممارسة الأعمال التجارية في العديد من الدول. وفقًا لمسح شمل ل 123 دولة ، تعتبر العديد من الشركات معدلات الضرائب المرتفعة من بين -03 أهم قيود على عملياتها تندرج الإدارة الضريبية ضمن أكبر 8 قيود معيقة لها.

إن حوكمة الإدارة الضريبية تشجيع دافعي الضرائب، وخاصة المؤسسات الاقتصادية، على إدراج التسجيل الرسمي لعملياتهم في الإقرارات الضريبية الخاصة بهم، وبالتالي توسيع القاعدة الضريبية وزيادة الإيرادات الضريبية، مما يشجع النمو الاقتصادي, على العكس من ذلك، فإن الإدارة الضريبية التي تفتقر إلى الشفافية، والغير عادلة ، وتتخذ خيارات مربكة تضر بسمعة النظام الضريبي واضعاف شرعية الحكومة:

أولا : تقريب المجتمع الضريبي من الإدارة الضريبية:

الإدارة الضريبية الحديثة هي تقوم بمساعدة المكلف بالضريبة في الوصول إلى دفع الضريبة المفروضة عليه ، وذلك من خلال تقريبه إليها بتوجيهه إليه ومحاورته وإيضاح علاقة الاتصال بينهما وإلغاء نظرته العدائية اتجاه الإدارة الضريبية ، لذلك لابد من الأخذ بعين الاعتبار العوامل النفسية التي تجعل المكلف بالضريبة يلتزم بالقانون لقناعته بأهمية الضريبة في المجتمع ، وليس نتيجة خشيته من العقوبات التي يقررها التشريع الضريبي التي إن تقريب المجتمع الضريبي من الإدارة الضريبية يستدعي إعادة النظر في وظيفتها، فلا تنحصر في وظيفة التحصيل فقط بغض النظر عن أسلوب التحصيل وإنما ينبغي معرفة مدى رضا المكلفين بالضريبة عن أدائها, تساعد الإدارة الضريبية الحديثة المكلف في دفع الضريبة المفروضة عليه بتقريبه منها بتوجيهه والتحدث معه وتوضيح علاقتهما وإزالة موقفه العدائي تجاه الإدارة الضريبية، لذلك من الضروري مراعاة الحالة النفسية للمكلفين بالالتزام بالقنانين الضريبية واقناعه بأهمية الضريبة في المجتمع, وليسى من اجل العقوبة المترتبه عليه في حال التهرب الضريبي, فالهدف الضريبي الأساسي الذي وجدت من أجله الإدارة الضريبية هو تحقيق ما يفضله المكلف وتقديم أفضل الخدمات الممكنة، ولأن هذا هو الهدف، يحق للمكلف مراقبة ومراجعة نظام الإدارة الضريبية، وكذلك الحق في إبداء رأيه, وهذا يستلزم تجنب الأساليب الإدارية التقليدية وتقديم الخدمات التي تخفف الأعباء النفسية والمالية لكلا الطرفين، وكذلك تعزيز ثقافة الإدارة الجيدة في الإدارة الضريبية التي تحكمها الكفاءة والإنتاجية والاحتراف من جهة ، ووضع قواعد واضحة لذلك. إشراك المجتمع الضريبي (أفراد ومؤسسات) في صياغة السياسة الضريبية من جهة أخرى.

ثانيا : تطبيق مبدأ الشفافية في التعامل

في التعامل بين الإدارة الضريبية والمكلفين، تتطلب الحوكمة الضريبية تطبيق مفهوم الانفتاح والشفافية هي أساس نهج الإدارة العقلاني، وكذلك الأساس لقياس قدرة المؤسسة على تحقيق أهدافها بشكل فعال وتعزيز وعي دافعي الضرائب بهيكلها وسياساتها. يستلزم تطبيق وتفعيل الشفافية النظر في موارد الإدارة والموارد المادية، ويمكن تحقيق ذلك من خلال:

- **الانتقاء الجيد للموظفين وتدريبهم**

لأن الموارد البشرية هي أساس الجهاز والقلب النابض لمختلف مراحل العملية الضريبية، من تقييم القاعدة الضريبية والتحصيل والرقابة الضريبية إلى تسوية المنازعات الضريبية، فإن اختيار الموظفين يمثل نقطة ارتكاز للحوكمة الضريبية وسر نجاح الجهاز الإداري في تطبيق وتطبيق مبدأ الشفافية في المعاملات ، لأن الموارد البشرية هي أساس الجهاز والقلب النابض لمختلف مراحل العملية الضريبية، من تقدير الوعاء الضريبي والتحصيل، والرقابة الضريبية التدريب والتأهيل العلمي والعملي من الأنشطة التي من شأنها تعزيز المفاهيم والعمليات لخلق الشفافية من أجل إدارة وترشيد الأداء الإداري والفني للموظفين.

- **مكنة مراحل العمل الضريبي باستخدام التكنولوجيا الحديثة**

إن تطبيق مبدأ الشفافية في الإدارة الضريبية يستدعي تعزيز قدراتها التكنولوجية، إذ لا تستطيع للإدارة الضريبية الحديثة أن تؤدي مهامها بكل كفاءة من دون استخدام تكنولوجيا المعلومات ومن بين القطاعات التي قد تتطلبها لتحقيق الشفافية الضريبية والمساعدة في مكافحة التهرب الضريبي نجد (Richard, 2010):

-حفظ دفاتر وسجلات المكلفين بالضريبة وتحصيل الضرائب

-"الرقابة الداخلية والسيطرة على الموارد"

-استخدام الأدوات الإلكترونية للإفصاح عن جميع المخاوف التي لدى الإدارة الضريبية وكشفها .

-استخدام الوسائل الإلكترونية في التخاطب والاتصال والإعلان والإخطار وتقديم التصريحات ، ودفع الضريبة

- "استحداث نظم لخفض الامتثال الضريبي".

ثالثا : نشر الوعي الضريبي

أصبحت الإدارة الضريبية الحديثة على علم تام بحق المكلفين بمعرفة التعليمات والتشريعات والقوانين وضرورة الاطلاع عليها، كما لهم أوجه الحق في الاتصال وطلب المشورة من الإدارة الضريبية، لذا يتعزز الوعي الضريبي من خلال وسيلتين هما :

1. توفير المعلومات

توفر المعلومات من خلال المطبوعات الرسمية التي يتم إصدارها من الإدارة الضريبية, والتي تتضمن أحكام قانون الضرائب، بالإضافة إلى توفرها حول الوسائل التي تستجيب بها لاستفسارات المكلفين ، ومن خلال بعض المنشورات من قبل مؤلفين متخصصين يعملون لحسابهم ويجمعون هذه المعلومات في المنشورات أو الكتب التي يتم إتاحتها للجمهور.

2. تقديم المساعدة للمكلفين بالضريبة

إلى جانب توفير المعلومات تعتبر تقديم المساعدة للمكلفين بالضريبة من قبل الإدارة الضريبية وسيلة هامة غفي تبصيرهم بحقوقهم تجنباً للوقوع في الخطأ عند تقديم التصريحات الضريبية وتتم تقديم هذه المساعدة بصيغ متعددة نذكر منها

- يحصل المكلفين الذين يتعاملون مع الإدارة على المشورة من قبل موظفي الإدارة الضريبية.
- الاتصال بالمكلفين عبر وسائل الإعلام المتعددة (التلفزيون، الهاتف، البريد الإلكتروني)
- الاستفادة من احتكاك المكلفين مع مفتشي الضرائب أثناء عملية المراجعة لتوضيح بعض التشريعات غير الواضحة.
- تعليق المعلومات في إدارة الضرائب أو الدوائر الحكومية، أو بالقرب من منازل أو مستشفيات المكلفين، حيث تنظم بعض إدارات الضرائب في البلدان المقدمة حملات إعلامية وتقود السيارات من موقع إلى آخر لتذكير المكلفين بتقديم الاقرارات الضريبية بكل شفافية، كما هو الحال في أستراليا، فرنسا، وألمانيا.

رابعاً: الرقابة الجبائية الخارجية ومكافحة التهرب الضريبي

تعتبر الرقابة المالية من أهم الإجراءات التي تستخدمها الإدارة الضريبية لحماية حقوق الخزينة العامة من خلال الكشف عن مختلف العمليات الاحتيالية التي تهدف إلى التهرب من دفع الضرائب ، وبالتالي فهي ضرورية ، خاصة بالنظر إلى طبيعة النظام الضريبي الذي يعتمد على دافعي الضرائب. البيانات ، التي قد تعكس أو لا تعكس موقفهم الحقيقي، لأن معظم الأهداف التي تراها الرقابة المالية مرتبطة بالتهرب الضريبي ومع ذلك ، لتحقيق هذا الهدف، يجب أن يضمن التشريع الضريبي قدرة إدارة الضرائب على ممارسة الإشراف على الميزانية وبالمقابل، فإنه يضمن حماية حقوق دافعي الضرائب في إطار من الشفافية الإجرائية.

المطب الثاني- التهرب الضريبي:

أولا: مفهوم التهرب الضريبي : *Tax evasion:* هو عدم قيام المكلف بتصريح بجزء من دخلة او ثروته, ويكون ذلك اما بغير قصد كالنسيان او بقصد تخفيض القيمة المصرح بها (عوادية, 2021)

وعرفها ايضاً بن عودة وبن ديبة وعبد القادر(2019) هو قيام المكلف باستخدام تكتيكات غير قانونية واستغلال الثغرات القانونية لتجنب دفع الضريبة قبل موعد الاستحقاق مما لها تأثير سلبي على تحصيل الدولة للضرائب.

وعرفها حديدي وحمودة (2019) ان التهرب الضريبي هو قيام المكلف بمخالفة القانون بهدف التخلص من دفع او من اجل تخفيضها.

ثانياً- أسباب التهرب الضريبي:

بينت دراسة المجلس الاقتصادي والاجتماعي الأردني (2014) إلى أن من بين هذه الأسباب نذكر ما يلي:

- أدت التعديلات المتكررة على نصوص قانون الضرائب إلى زيادة تعقيد وتقلب النظام الضريبي ، مما جعل من الصعب على المكلفين فهم النصوص القانونية المتعلقة بالضرائب والامتثال لها، مما شجع المكلفين على التهرب الضريبي.
- عدم تشديد تنفيذ عقوبة التهرب الضريبي مما أدى إلى لجوء المكلفين بشكل متكرر إلى التهرب الضريبي وعدم رضاهم عنها. عندما يقارن المكلفون الغرامة المستحقة بالمال الذي سيحصلون عليه نتيجة تهربهم ، يتعلم المتهرب من العقوبة أن تأثير التهرب يفوق العقوبة ، وبالتالي يستمر في هذه العملية.
- هناك نقص في البيانات والمعلومات المتعلقة بالصناعات المتعددة في الدولة, مثل الأطباء والمهندسين وغيرهم من المهنيين.
- ضعف المراقبة والكفاءة لدى أجهزة التحقيق وعدم اهتمام الإصلاحات الضريبية مماسهل من عمليات التهرب الضريبي.

- عدم كفاية الرقابة والفعالية على منظمات التحقيق، فضلاً عن عدم الاهتمام بالتغييرات الضريبية التي تعزز أنشطة التهرب الضريبي.
- "ارتفاع تكلفة المعيشة نتيجة ارتفاع المستوى العام للأسعار".
- ضعف الوعي الضريبي لدى المكلفين.
- إحساس المكلفين بعدم العدالة الضريبية.
- تصور جميع المكلفين بارتفاع معدلات الضرائب.

ثالثاً- الأفعال التي تعتبر تهرباً ضريبياً:

"نصت المادة رقم (55) من قانون ضريبة الدخل رقم 38 لسنة 2018 لتحديد الأفعال التي يتم اعتبارها تهرباً ضريبياً، فقد نصت الفقرة (أ) من المادة نفسها على ما يلي (قانون ضريبة الدخل، 2018):

أ. "تقديم الإقرار الضريبي بالاستناد إلى سجلات أو مستندات مصطنعة أو تضمينه بيانات تخالف ما هو ثابت في السجلات أو المستندات التي أخفاها مع علمه بذلك".
ب. "تقديم الإقرار الضريبي على أساس عدم وجود سجلات أو مستندات وتضمينه بيانات تخالف ما هو ثابت لديه من سجلات أو مستندات أخفاها".
ج. "الاتلاف قصداً للسجلات أو المستندات ذات الصلة بالضريبة قبل انقضاء المدة المحددة للاحتفاظ بهم وفق أحكام هذا القانون".
د. "اصطناع أو تغيير فواتير الشراء أو البيع أو غيرها من المستندات لإيهام الدائرة بقلة الأرباح أو زيادة الخسائر."
ه. "اخفاء نشاط أو جزءاً منه مما يخضع للضريبة".

رابعاً: عقوبة التهرب الضريبي:

تستخدم بعض البلدان مجموعة من العقوبات، بما في ذلك الغرامات والسجن، لردع التهرب الضريبي, أما في الأردن فقد عالج المشرع الأردني التهرب الضريبي من المادة (66) من القانون المعدل لقانون ضريبية الدخل رقم (38) لسنة 2018 من حيث اعتبر "القانون ان التهرب الضريبي وفي المادة (2) بأنه استعمال أساليب احتيالية تنطوي على غش او خداع او تزوير أو إخفاء البيانات او تقديم بيانات وهمية او المشاركة في إي منها قصداً بهدف عدم دفع الضريبة او التصريح عنا كلياً او جزئياً او تخفيضها وفق ما هو حد من هذا القانون"، وفرض المشرع الأردني من القانون المعدل لقانون ضريبية الدخل رقم (38) لسنة 2018 "(المادة 66 الفقرة أ) غرامة تعويضية تعادل مثل الفرق الضريبي كل من قام بالتهرب الضريبي اوحاول التهرب او ساعد او حرض غيره على التهرب من الضريبية بان اتي باي فعل من الأفعال التالية" (ابو نصار,2021):

1- "قدم الإقرار الضريبي بالإستناد إلى سجلات او مستندات مصطنعة او ضمنه بيانات تخالف ما هو ثابت في السجلات او المستندات التي أخفاها مع علمه بذلك".
2- "قدم الإقرار الضريبي على أساس عدم وجود سجلات او مستندات وضمن بيانات تخالف ما هو ثابت لديه من سجلات او مستندات اخفاها"
3- "أتلف قصداً السجلات أو المستندات ذات الصلة بالضريبة قبل انقضاء المدة المحددة للاحتفاظ بها وفقا أحكام هذا القانون".
4- "غير فواتير الشراء أو البيع أو غيرها من المستندات ليه لإيهام الدائرة بقلة الأرباح أو زيادة الخسارة".
5- "أخفى نشاط أو جزء منه مما يخضع للضريبة".
6- "اقتطاع مقدار الضريبة وفقا أحكام هذا القانون ولم يوردها للدائرة خلال 30 يوما من تاريخ دفعها".
7- "لم يصدر فاتورة أصولية".

"وأشارت الفقرة ب من المادة 66 من القانون المعدل لقانون ضريبة الدخل رقم (38) لسنة 2018 أنه في حال تكرار ارتكاب أي من الأفعال السبعة المحددة أعلى تفرض على المكلف بالإضافة الغرامة المالية (غرامه تعويض يتعادل مثل الفرق الضريبي) العقوبات التالية:

1- "الحبس مدة لا تقل عن أربعة أشهر ولا تزيد عن سنة واحدة في حال ارتكاب بأي من الجرائم للمرة الثانية".
2-" الحبس مدة لا تقل عن سنة واحدة ولا تزيد عن سنتين في حال ارتكاب اي من الجرائم للمرة الثالثة".
3- "الحبس مدة لا تقل عن سنتين ولا تزيد عن ثلاث سنوات في حال ارتكاب أي من الجرائم للمرة الرابعة وما يليها"

الخاتمة

بعد استعراض أسباب التهرب الضريبي وطرق الإدارة الضريبية في مكافحتها من خلال سن القوانين والتشريعات وإصدار العقوبات توصلنا إلى مجموعة من الاستنتاجات والتوصيات التي نعتقد أنها مطلوبة, للعمل على وضعها كوسيلة للحد من التهرب الضريبي.

الاستنتاجات

1- تطبيق معايير الحكومة الضريبية يزيد من الثقة والمصداقية للمكلفين وبالتالي سوف يحد من التهرب الضريبي وزيادة الإيردات الضريبية للدولة
2- عدم توفر المصداقية والثقة بين المكلف والإدارة الضريبية يخلق نوع من الفجوة بينهم مما يساعد في التهرب الضريبي
3- غياب تطبيق معايير الحوكمة الضريبية في المؤسسات الضريبية يساعد في التهرب الضريبي.
4- تعمل الحوكمة الضريبية على توفير بيئة ملاءمة لتحقيق العدالة الضريبية.
5- يلجأ المكلفين إلى التهرب الضريبي بسبب عدم لمسهم للخدمات التي يجب على الدولة تقديمها لهم مقابل اخذ الضريبة.
6- عدم وجود قوانين رادعة عند قيام المكلف بالتهرب الضريبي لأول مره.
7- التهرب الضريبي هو عدم قيام المكلف بتصريح بجزء من دخلة او ثروته, ويكون ذلك ام بغير قصد كالنسيان او بقصد تخفيض القيمة المصرح بها.

التوصيات

1- ضرورة قيام الإدارة الضريبية في الأردن بالالتزام بمعايير الحكومة الضريبية.
2- ضرورة قيام الإدارة الضريبية بتغليظ العقوبات الناتجه عن التهرب الضريبي.
3- ضرورة قيام الإدارة الضريبية بنشر نشرات توعية عبر منصاتها الالكترونية عن مخاطر التهرب الضريبي وعن العقوبات المترتبة عليها.
4- تسهيل قنوات التواصل بين المكلفين والدائرة وذلك من خلال الاجابه على استفساراتهم بشكل دوري.
5- العمل على انشاء دورات تدريبه للموظفين في الإدارة الضريبية عن معايير الحكومة الضريبية لما لها من اثر في رفع الإيرادات الضريبية.

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THE EFFECT OF REPLACING THE POWDERED MIXTURE OF LIMESTONE AND BRICK ON THE MECHANICALPROPERTIES OF THE CONCRETE

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Abstract

The production and use both of bricks and limestone in factories and workplaces make in large quantities of waste. In this work, the powder of these wastes was used in different proportions instead of the weight of cement for the issues of concrete work. A concrete mixture was prepared and designed in a ratio of (3:1.5:1) For cement, fine aggregate and coarse aggregate, respectively, the amount of water needed to give a better workability and pressure resistance was determined at (28 and 60) days with a ratio of (w/c=0.5).
As for the substitution ratios of the powder mixture of the bricks and limestone by weight of cement, they were (0%, 10%, 15%, and 20%) in order to know the effect of this on the operability, the quantity of water needed for mixing and the pressure resistance.
The results of this paper showed a gradual decrease in the operability of the mixture, as well as a decrease in the compressive strength for both ages of hardened concrete from the design strength value, but this decrease in both the operability of the concrete mixture and the compressive strength remains within certain limits for the replacement ratios (10% and 15%).

Keywords: Limestone, Bricks, Mechanical properties, Concrete.

تأثير إحلال خليط مسحوق مادتي الحجر الجيري وطوب الآجر على الخواص الميكانيكية للخرسانة

الملخص

إن عمليات إنتاج واستخدام مادتي طوب الآجر والحجر الجيري في المعامل ومواقع العمل ينتج عنها كميات كبيرة من المخلفات، في هذه الورقة تم استعمال مسحوق هذه المخلفات وبنسب مختلفة بديلاً عن وزن الاسمنت لأغراض عمل الخرسانة، حيث تم تجهيز وتصميم خلطة خرسانية بنسبة (1:1.5:3) لكل من الاسمنت والركام الناعم والركام الخشن على التوالي، وتم تحديد كمية الماء اللازم لإعطاء قابلية تشغيل جيدة ومقاومة الضغط بعمر (28 و 60) يوم بنسبة (w/c=0.5).
أما نسب الإحلال لخليط مسحوق مادتي طوب الآجر والحجر الجير من وزن الاسمنت فكانت (0% , 10% , 15% , 20%) وذلك لمعرفة تأثير ذلك على قابلية التشغيل وكمية الماء اللازم للخلط ومقاومة الضغط.
أوضحت النتائج المتحصل عليها من هذه الدراسة انخفاض تدريجي في تشغيلية الخلطة وكذلك انخفاض في مقاومة الضغط لكلا العمرين للخرسانة المتصلدة عن قيمة المقاومة التصميمية ولكن هذا الانخفاض في كل من تشغيلية الخلطة الخرسانية ومقاومة الضغط تبقى داخل حدود المواصفات لنسب الإحلال (10% و15%).

الكلمات المفتاحية: الحجر الجيري، طوب الآجر، الخواص الميكانيكية، الخرسانة.

FLORISTIC COMPOSITION OF *ZYGOPHYLLUM COCCINEUM* L. ASSOCIATES IN ZLITEN COAST, LIBYA

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Abstract
Zygophyllum coccenium is a perennial halophyte widely-distributed in coastal areas and arid desert wadis in Libya with wide-ecological amplitude. In the current study, 40 sampled stands, the floristic features and chorology of *Z. coccenium* and its associated species along the coastal zone of Zliten City, Libya were addressed. In each stand, a list of all species with their families and life-span were documented. Agglomerative Hierarchical Clustering (AHC) and Principle Component analysis (PCA) ordination were applied for the sampled stands and plant samples. A total of 49 species belonging to 47 genera and 23 families were recorded. Four families (Asteraceae, Fabaceae, Poaceae and Chenopodiaceae) were the leading families, collectively contributing by 44.89% of the total number of surveyed species. Therophytes had the highest contribution (20 species, 40.82%), followed by phanerophytes (12 species, 24.49%), cryptophytes and chamaephytes (6 species each, 12.24% each), then hemicryptophytes (5 species, 10.2%). Mono-regional taxa were represented by 32.65%, bi-regional taxa by 30.61%, worldwide taxa by 18.37% and pluri-regional taxa by 14.29%. Three plant groups/clusters were obtained and named after the dominant and codominant species with the highest importance values as follows: group A: *Tamarix nilotica- Zygophyllum coccineum*, group B: *Acacia cyanophylla- Zygophyllum coccineum* and group C: *Zygophyllum coccineum- Cakile maritima*.

Keywords: Libya, Flora, Mediterranean, *Zygophyllum*, life forms.

الغطاء النباتي المصاحب لنبات الرطريط على طول ساحل مدينة زليتن, ليبيا

الملخص
نبات الرطريط نبات ملحي معمر منتشر على نطاق واسع في المناطق الساحلية والوديان الصحراوية القاحلة في ليبيا مع مدى بيئي واسع. في الدراسة الحالية، تم مسح 40 موقعا، حيث تم تسجيل السمات الأنواع النباتية المصاحبة لنبات الرطريط على طول المنطقة الساحلية لمدينة زليتن، ليبيا. في كل موقع، تم تسجيل قائمة بجميع الأنواع مع عائلاتهم وفترة النمو. تم تطبيق تنسيق التكتل الهرمي التجميعي (AHC) وتحليل المكونات الأساسية (PCA) على المواقع والنباتات المسجلة. تم تسجيل 49 نوعًا تنتمي إلى 47 جنسًا و 23 عائلة. كانت أربع عائلات (المركبة والقرنية والنجيلية والرمرامية) هي العائلات السائدة، حيث ساهمت مجتمعة بنسبة 44.89 ٪ من إجمالي عدد الأنواع التي تم مسحها. كانت النباتات الحولية أعلى مساهمة (20 نوعًا، 40.82٪)، تليها الشجيرية 12 نوعًا، 24.49٪، المختفيات 6 أنواع 12.24% (ثم شبة المختفيات 5 أنواع، 10.2٪). تم تمثيل الأصناف أحادية المنطقة بنسبة 32.65٪، والأصناف ثنائية الإقليم بنسبة 30.61٪، والأصناف العالمية بنسبة 18.37٪، والأصناف متعددة المناطق بنسبة 14.29٪. قد أمكن التعرف على ثلاثة مجموعات من النباتات (A, B, C) سميت

حسب النبات السائد وشبه السائد كالتالي مجموعة (أ) يسودها نباتى الرطريط والأثل بينما المجموعة (ب) يسودها الأكاسيا والرطريط وأخير المجموعة (ج) يسودها نباتى الرطريط ورشاد البحر.

الكلمات المفتاحية: ليبيا، الفلورة، البحر المتوسط، الرطريط، أشكال الحياة.

SOCIETY'S VIEW OF DIVORCED WOMEN - THE RIGHTS OF WOMEN AND THEIR CHILDREN IN LIBYAN LAW AND THE CONSEQUENCES OF CASES OF SEPARATION OR THE TERMINATION OF THE MARITAL RELATIONSHIP

Najah salama Mohamed Algamodi

Abstract
The society views the divorced woman with an unjust look, at a time when she is in dire need of a look of kindness and tenderness, which would enable her to return to a state of natural psychological balance after the tremor that struck her, and made her live in a state of defeat, enabling her to integrate and re-integrate into society And with the spread of the phenomenon of divorce in the middle of different societies, the aim of this research is to shed light on this phenomenon and its causes and the society's view of the divorced woman. To many observations and results through This study, the most important of which is that a divorced woman should leave the past behind her; So that it does not affect her life, and change her psychology from within so that the situation surrounding her changes, with the need to commit to oneself to create a better future for herself, and to stay away from frustration and be patient with affliction.
Keywords: Divorced woman, Society's view, Women's rights, Marital relationship.

نظرة المجتمع للمرأة المطلقة
حقوق المرأة وأبنائها في القانون الليبي والآثار المترتبة على حالات الانفصال أو انتهاء العلاقة الزوجية

الملخص

أن المجتمع ينظر إلى المرأة المطلقة نظرة ظالمة، في الوقت الذي تكون هي فيه في أمسّ الحاجة لنظرة عطف وحنان، تمكّنها من العودة إلى حالة التوازن النفسي الطبيعية بعد الهزة التي أصابتها، وجعلتها تعيش حالة من الانهزام، بما يمكّنها من الاندماج والانخراط من جديد في المجتمع، ومع انتشار ظاهرة الطلاق في أواسط المجتمعات المختلفة، هدف هذا البحث لتسليط الضوء على هذه الظاهرة وأسبابها ونظرة المجتمع للمرأة المطلقة، وتم تناول هذه النظرة من وجهات نظر عدة شخصيات أجروا دراسات مختلفة على نساء مروا بتجربة الطلاق، أو فقدان الزوج بأي سبب، وتم التوصل إلى العديد من الملاحظات والنتائج من خلال هذه الدراسة، وأهمها أنه ينبغي على المرأة المطلقة أن تترك الماضي خلفها؛ حتى لا يؤثر على حياتها، وتغير نفسيتها من الداخل حتى يتغير الوضع المحيط بها، مع ضرورة الالتزام مع النفس لصنع مستقبل أفضل لنفسها، والابتعاد عن الإحباط والصبر على الابتلاء.

الكلمات المفتاحية: المرأة المطلقة، نظرة المجتمع، حقوق المرأة، العلاقة الزوجية.

المقدمة

بسم الله الرحمن الرحيم
(يَاأَيُّهَا النَّبِيُّ إِذَا طَلَّقْتُمُ النِّسَاءَ فَطَلِّقُوهُنَّ لِعِدَّتِهِنَّ وَأَحْصُوا الْعِدَّةَ وَاتَّقُوا اللَّهَ رَبَّكُمْ لَا تُخْرِجُوهُنَّ مِنْ بُيُوتِهِنَّ وَلَا يَخْرُجْنَ إِلَّا أَنْ يَأْتِينَ بِفَاحِشَةٍ مُبَيِّنَةٍ وَتِلْكَ حُدُودُ اللَّهِ وَمَنْ يَتَعَدَّ حُدُودَ اللَّهِ فَقَدْ ظَلَمَ نَفْسَهُ لَا تَدْرِي لَعَلَّ اللَّهَ يُحْدِثُ بَعْدَ ذَلِكَ أَمْرًا) [سورة الطلاق:1].

نظرة المجتمع للمرأة المطلقة نظرة قاسية فيها من العتاب واللوم وقسوة المعاملة وقلة احترامها مما يجعلها أكثر عرضه للذئاب البشرية بحكم فقد عذريتها وتسترها بكلمة مطلقة، ضعاف النفوس من المطلقات هن اللاتي يقبلن بهذه العروض .
وأسباب تخلي المطلقة عن أداب الخلق وعادات المجتمع وأحكام الدين بسبب تعرضها لكثرة الضغوط النفسية من الأهل أو المجتمع المختلطة فيه، وعدم تقبل المجتمع لهذه الحالة وسد كل باب قد يساعدها للخروج من الضغوط النفسية مما يجعلها

تشعر بالذنب والفشل العاطفي وخيبة الأمل والإحباط والخوف من تكرار تجربة الزواج. فالمرأة لا تلجأ إلى الطلاق إلا بعد أن تصل ذروة اليأس والفشل والألم، بعد حياة كانت مليئة بالظلم أو الشعور بالوحدة وفقد الحنان والحب ومن هذا المنطلق نتطرق إلى نظرة المرأة المطلقة في بعض المجتمعات اول ما تواجه المرأة المطلقة هو اهتمامها من شريحة واسعة في المجتمع انها امرأة سيئة وتحميلها مسؤولية الطلاق واتهامها بمخالفة القاعدة الاجتماعية السائدة من بيت الزوج الي القبر على الرغم ان الطلاق رخصة شرعية ونظام اجتماعي وشرعي لا يمكن انكاره كحق ثابت لكل رجل ولكل امرأة في حالة استحالة الحياة الزوجة بينهما " فإمساك بمعروف او تسريح بإحسان " ويعد الزواج عاملا بنائيا للمجتمع من حيث حفظ وتوسيع العلاقات الاجتماعية و زيادة النسل الاجتماعي فهو الأساس في تكوين اللبنة الاولى والصلبة في المجتمع من خلال التكوينات الاسرية فيما بعد الطلاق عامل هدم حيث يعمل على تفكيك الأسرة وانحلال العلاقات الاجتماعية مما يضعف أداء الأسرة لوظائفها. والدين ينعكس على المجتمع وترابطه ولايخرج النظر الى المطلقة كمذنبة عن النظرة الذكورية للمرأة عموما. تلك النزعة الذكورية التي تسيطر على بعض النساء بسوء الأخلاق والخروج عن المألوف واعتبار الطلاق بحد ذاته خطيئة بغض النظر على الاسباب والظروف ومنها من يرى:

المرأة المطلقة بضاعة مستعملة وهذه العقلية موجودة لدي الشريحة الاجتماعية التي تنظر للأنثى عموما بوصفها بضاعة لي عدم الإنسانية. المرأة المطلقة سهلة الاغواء. من المضايقات التي تعاني منها المرأة المطلقة نظرة الرجال إليها انها امرأة سهلة المنال. المطلقة فرصة للتسلية. من الأمور التي تجعل الرجال ينظرون الى المرأة كفرصة للتسلية المرأة المطلقة خطيرة على المتزوجات. حيث يعتقد بعض النساء ان المرأة المطلقة تبحث عن زوج دائما او تبحث على علاقة مع أي رجل لذا نجد المرأة المطلقة تتعرض للنبذ من المتزوجات حتى المقربات منها. المطلقة مسكينة وتستحق الشفقة قد تكون نظرة الشفقة مفيدة احيانا للمرأة المطلقة من خلال تسهيل بعض أمورها او مساعدتها على إيجاد ما يعليها لكن هذه النظرة مغالطة كبيرة لأنها ليست مسكينة دائما ولاترغب كل النساء الي شفقة او المساعدة.

النظرة الاجتماعية للمرأة المطلقة من الهموم الكبيرة التي تواجه النساء عند التفكير بالطلاق، حتى وإن كان سبب طلب المرأة للطلاق سبباً وجيهاً لا يختلف عليه اثنان، ستتردد وتفكر ألف مرة لأنها تعلم أن المجتمع وينظر إليها نظرة سلبية تؤثر على مستقبلها وحالتها النفسية والاجتماعية لا يتسامح مع المرأة المطلقة ،فنظرة المجتمع سلبية قاتلة، لا تهاون فيها ولا رحمة، ينظرها المجتمع إلى المرأة المطلقة، وكأنها ارتكبت جرمًا أو فاحشة، نتيجة فهم خاطئ للعرف الاجتماعي، بالإضافة إلى بعض الموروثات والعادات التي قد تمنعها من ممارسة حياتها بعد الطلاق بشكل طبيعي

" 60% من النساء يشعرن بعقدة الذنب بعد الطلاق" هذا ما أكدته الدراسات الميدانية، موضحةً أن عملية التوافق النفسي للمطلقات تمر بثلاث مراحل، الأولى مرحلة الصدمة، حيث يعاني المطلقون من الاضطراب الوجداني والقلق بدرجة عالية، والثانية هي مرحلة التوتر، والتي يغلب عليها القلق والاكتئاب وتتضح آثارها في الأساس بالاضطهاد والظلم والوحدة والاغتراب والانطواء والتشاؤم وضعف الثقة بالنفس، وعدم الرضا عن الحياة، أما المرحلة الثالثة فهي إعادة التوافق، وفيها ينخفض مستوى الاضطراب الوجداني، ويبدأ المطلقون إعادة النظر في مواقفهم في الحياة بصفة عامة، والزواج بصفة خاصة.

المُطلقة الضلع الحسّاس بالمجتمع، الذي يختبئ عادة من المواجهة؛ خوفا من الأحكام المقولبة أساسا، فهي المتمردة، الأنانية، غير الحكيمة، المُخطئة، وغيرها من الأحكام التي سبق تجهيزها، والتي تقف المطلقة عاجزة أمام الوسيلة الأمثل/الأكثر نجاعة التي يجدر بها استخدامها لتغيير هذه الأحكام، فتختار -عادة- أن تُصدق أو تتماشى مع هذه الأحكام لتؤمن أنها تُشبهها فعلا، أو تختار الصمت، فأن يُفك حصار الصمت لتبدأ المواجهة؛ أمر ليس يسيرا عليها.

وتشهد المجتمعات العربية ارتفاعاً مطرداً بنسبة الطلاق، حيث سجلت المملكة العربية السعودية ارتفاعاً مستمراً بنسبة الطلاق خلال خمس سنوات بمعدل 2% سنوياً تقريباً، ونسبة تقترب من 30% من الزيجات في المملكة تنتهي بالطلاق سنوياً، وسجلت مصر حوالي ربع مليون امرأة مطلقة عام 2017 وحده، مع ارتفاع متزايد سنوياً في نسب الطلاق، وهذا حال معظم الدول العربية.

وبعيداً عن أسباب ارتفاع نسب الطلاق المعقدة، تواجه النساء المطلقات تحديات كبيرة بسبب نظرة المجتمع للمرأة المطلقة، ما يجعل تحليل النظرة الاجتماعية للمطلقة ومحاولة الوقوف على أسباب هذه النظرة وخصائصها؛ ضرورةً اجتماعية لحماية المطلقات من الوصمة الاجتماعية ومساعدتهن على بناء حياة طبيعية بعد الطلاق.

وبعد أن تتحول الطاقة السلبية لدى المطلقة إلى طاقة إيجابية، وتستعيد توازنها النفسي والاجتماعي في تغيير نفسيتها من الداخل وتتعامل مع الواقع بشكل يمنحها القدرة على التعامل مع المجتمع المحيط بها بكل شجاعة.

نظرة المجتمع للزوجة المطلقة

نرى في المجتمعات العربية مازالت تنظر إلى المرأة المطلقة نظرة دونية وتسقط عليها تبعات الطلاق وتحملها كامل المسؤولية مؤكدين أن هذه الإسقاطات فيها الكثير من الظلم والضرر النفسي والمعنوي الذي يلحق بالمرأة المطلقة وأشاروا إلى الآثار النفسية والاجتماعية والشرعية والقانونية التي تطال المرأة المطلقة مباشرة بعد حدوث الطلاق وإلى الأبعاد الاجتماعية الناجمة عن الطلاق.

وقد تضحى الأم بسعادتها وراحة بالها وترضى بالعيش وسط هذه الضغوط النفسية من اجل أولادها فتقرر العيش من أجلهم ومن أجل تربيتهم مستنكرة ورافضة لقرار الانفصال وتوابعه التي تدينها هي ولا تدين الرجل، فالرجل في المجتمعات الشرقية برئ من كل الاتهامات في حالة الانفصال، فالرجل قادر على البدء من جديد والزواج بأخرى في حالة انفصاله بصورة نهائية من المرأة المنفصلة التي تجد المجتمع رافضا لها ولموقفها، فلا تجد سوى الانصياع للموروثات الثقافية التي عفى عليها الزمن وأصبحت كالطوق حول الرقاب لا يستطيع احد الفكاك منها مثل:

"الطلاق النفسي " التي تستمر فيها العلاقة الزوجية أمام الناس فقط لكنها منقطعة الخيوط بصورة شبه كاملة في الحياة الخاصة للزوجين فالطلاق النفسي هو وجود حالة من الجفاف العاطفي والانفصال الوجداني بين الزوجين، وبعد كل منهما عن الآخر في أغلب أمور حياتهما. ويرتبط الطلاق النفسي عادة بمرحلة منتصف العمر، وقد يكون الطلاق على خطورته البالغة أسهل من الطلاق النفسي الذي لايرجى برؤه وكأن الزوجين المطلقين نفسياً جثتان تعيشان مع بعض وبالجسد فقط وكأن حياتهما الزوجية ميتة وهي عرفاً على قيد الحياة ويميز المحللون النفسيون بين نوعين من "الطلاق النفسي"،النوع الأول هو الذي ذكرناه في السطور السابقة، حينما يكون الطلاق النفسي صادر عن وعي وإرادة الطرفين في العلاقة الزوجية بعلمهم الكامل.

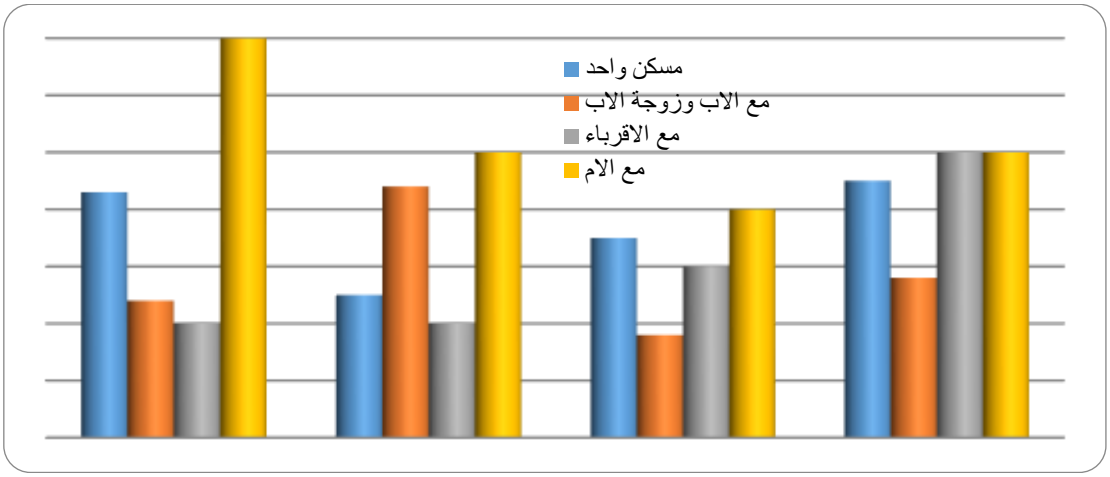
أما النوع ألآخر هو أن يكون "الطلاق النفسي" قائم من أحد الطرفين فقط دون علم أو وعي الآخر، وهو عندما يشعر الطرف الأول بعدم الرضا لاستمرار علاقته مع الطرف الثاني لكنه يصبر على هذا الشعور ويكبته خشية الوقوع في براثن الطلاق وهذا النوع غالباً ما تكون فيه المرأة هي الطرف الواعي لحالة الطلاق النفسي دون علم أو إدراك زوجها. ويكون الطلاق النفسي في كثير من الحالات عن طريق طرف واحد، في حين أن الآخر يجهل ذلك كلياً، وإذا كان الطلاق النفسي عن طريق المرأة فإن العلاج يكون أصعب خاصة إذا وصلت المرأة إلى قناعة بعدم أهلية زوجها للقيام بدور الرجل في حياتها، لأن هذه القناعة تعني بصورة آلية حدوث الطلاق النفسي مستقبلا حتى لو استمرت في زواجها بشكل طبيعي إن أنجبت.

نظرة الدكتور خالد قنديل للمرأة المطلقة

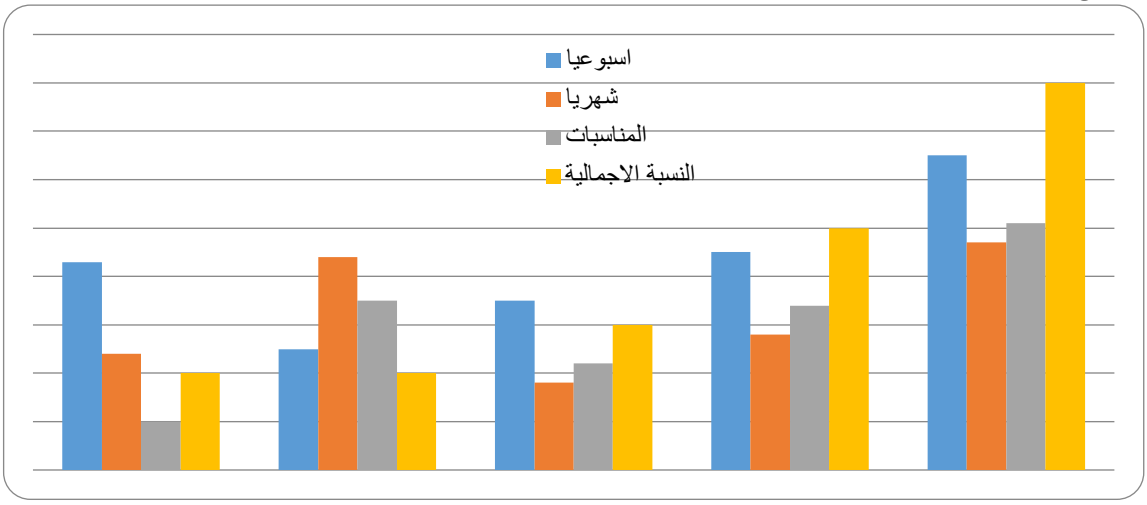
في مستهل حديثه عن من هو المظلوم عندما يحدث الطلاق المرأة المطلقة أم المجتمع قال إن الإعتقاد السائد دائماً أن المرأة هي المظلومة وأن المجتمع هو الظالم وهذا ميزان غير عادل على اعتبار أن المطلقة تجد من يدافع عنها من أبناء جنسها ولكن المجتمع من يدافع عنه إذا ظلم، ولذلك أصبحنا نعلق كل أخطائنا على شماعة المجتمع، فإذا كان هذا هو الواقع ولا مفر منه فلنركز حديثنا على جانب مهم من جوانب معاناة المرأة المطلقة، وأضاف أن أكثر ما تعانيه المطلقة هو خوفها من نظرات الناس وكلامهم حيث تبدأ في تحسس أحاديث الناس وما يقولونه عنها وعن سبب طلاقها وتبدأ هي بتلقي عبارات الإيحاءات السلبية مثل إنها هي الفاشلة وهي التي لم تتمكن من المحافظة على زوجها وبيتها وأن العيب فيها وليس في الرجل، وتساءل كم ستستمر معاناة المرأة المطلقة من المجتمع؟ شهراً أم سنة؟ ففي النهاية سوف ينصرف عنها المجتمع ويهملها وتقع هي في حسرة معاناتها النفسية والاجتماعية.

وركز قنديل على معاناة المرأة التي تبدأ بعد انتهاء عدة الطلاق مباشرة خاصة إذا كان لديها أبناء وحصرها في النقاط التالية:

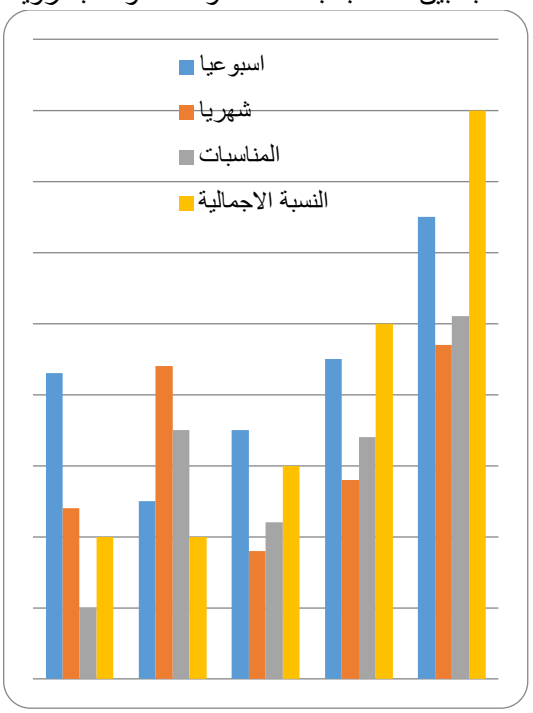
1. المطالبة بنفقة العدة والمتعة، كذلك الأبناء والمواصلات والسكن، وعرض دراسة تتعلق بسكن الأبناء بعد حدوث الطلاق ووجد أن الأبناء الذين يعيشون مع الوالدين في مسكن واحد 60.5% ومع الأب وزوجة الأب 70.4% ومع الأقرباء 40.1% ومع الأم 90.88 %.

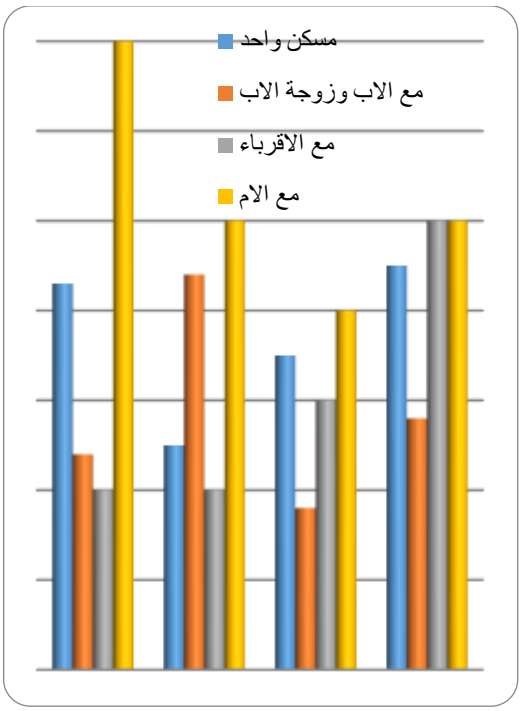


2. الأوراق الثبوتية وقضايا المحاكم، حيث في بعض الحالات يحبس الزوج ملابس زوجته وصورها الخاصة (نذكر قصة الزوج الذي ألقى بملابس زوجته من أعلى البناية أمام الناس).
3. رؤية الأبناء، وقد أعد دراسة حول هذه النقطة من خلال خبرته في المحاكم ووجد أن نسبة الآباء الذين يلتزمون برؤية أبنائهم يومياً بعد الطلاق تبلغ 70.2% وأسبوعياً 60.3% وشهرياً 70.9 % وبالمناسبات 30.8 % أما الذين ينقطعون عن الرؤية تماماً فتجاوزت نسبتهم الـ 90.3%. ويرى هنا ان الطلاق رحمة في كثير من الأحيان وليس مشكلة كما يتصور البعض.



-النسبة بين المطالبة بنفقة العدة والمتعة والنسبة رؤية الأبناء





نظرة الدكتورة فاطمة عياد للمرأة المطلقة

من جانبها تحدثت عن الآثار النفسية للطلاق على الأطفال وفي مقدمتها القلق والاكتئاب، ثم الفشل في الدراسة والإدمان على المخدرات، وتدني نسبة الذكاء، طفولة هشة وغير مستقرة، الإحساس بتهديد ذاتي وعدم استقرار نفسي، وأخيراً شعور الطفل بالذنب كونه أحد أسباب الطلاق.

نظرة الدكتور مسعد شلاش للمرأة المطلقة

تناول الأبعاد الاجتماعية الناجمة عن الطلاق ونظرة المجتمع إلى المرأة المطلقة، وقال نحن كمجتمع عربي ذكوري مازال يختزن موروثاً جاهلياً يجعله ينظر إلى المرأة المطلقة نظرة دونية يسقط عليها تبعات الطلاق ويحملها كامل المسؤولية.
ودعا إلى التعامل مع المطلقات بشكل إنساني يتناسب مع آدميتهن وتساءل عن سبب عزل المطلقات في سكن خاص بضاحية صباح السالم وكأنهن نكرة أو مرض معد ويخشى من اختلاطهن بباقي فئات المجتمع، وطالب الدولة بتوفير السكن أو بدل إيجار للمطلقة بحيث يسمح لها بالعيش في أي منطقة سكنية تختارها.

نظرة المحامي محمد الدلال للمرأة المطلقة

قال إن الطلاق هو مسار من مسارات الحياة و شرّعه رب العالمين في حالة انقطاع رابطة الزوجية ووجد ما يحول دون استمرارها · وأشار إلى أن التشريعات القانونية نظمت الطلاق من خلال أسس معينة تشمل مجلة الأحكام، المذاهب الإسلامية المفيدة مع مراعاة تنوعها بين الطوائف وإتباع الأديان الأخرى مشيراً إلى أن التشريعات قد تكون مناسبة وملائمة وفيها العدالة والأنصاف ولكن المشكلة هي مع تلك التشريعات وتجاوزها والالتفاف عليها.

أسباب النظر للمرأة المطلقة بهذه النظرة

ثقافة المجتمع وعاداته وتقاليده هي سبب هذه النظرة، ولو نقارن بين مجتمعنا العربي وبين المجتمعات الغربية لوجدنا عدم اهتمام المجتمع الغربي بكون المرأة مطلقة أم لا، ومع هذا فإن ديننا الإسلامي كرم المرأة وجعل لها مكانة خاصة و نأتي بأكبر مثل لقدوتنا سيدنا محمد صلى الله عليه وسلم فإن أغلبية زوجاته عليهن السلام كنا متزوجات من قبل أو أزوجهن متوفين، لذا فإن الإسلام أعتنى بالمرأة وكرمها من قبل أي مجتمعات أخرى لذا أعود وأكرر إن السبب الرئيسي إلى هذه النظرة للمرأة المطلقة هو نفس البشر في المجتمع، فبمجرد أن تطلق المرأة كأنها أقترفت ذنب لماذا؟! لأنها لم تحافظ على بيتها، لذا لا تصلح لأي أمر فبرأيهم هذا أنها لم تحافظ على أهم الأمور ستحافظ على غيرها، فيجب أن يكون هناك جمعيات تهتم بمصالح المرأة المطلقة والمحافظة عليها في حال تخلى عنها مجتمعها.

الجهل هو العدو الأول الذي يحول دون تطور المجتمعات، وعدم الثقة العدو الثاني لتقدم المجتمعات، وإذا اجتمعوا أصبحت المجتمعات المتقدمة عند انفصال الزوجين يلجأ كلاهما إلى مصحة نفسية لكي يدركوا أخطائهم ويسارعوا في حلها حتي لا تتجدد معهم هذه الأخطاء ويتمكنوا من تأسيس قاعدة لمستقبل مشرق لهم ولأبنائهم هذا مايجعلهم يتفوقون علي مجتمعاتنا العربية خصوصاً لان الجهل في الأشياء يجعلهم غير قابلين للنقاش والحوار والأخذ بعين الصواب.

أسئلة طرحت عن المرأة المطلقة وحقوقها

السؤال الأول: ما هي نظرة المجتمع والأهل إلى المطلقة والأرملة؟ هل هي نظره متساوية من حيث أن الحالتين فاقدتي الزوج؟

السؤال الثاني: ماهي حقوق المطلقة التي ليس لديها أطفال وحقوق المطلقة التي لديها طفل أو أكثر بعد وقوع الطلاق؟

والآن سوف نجيب على هذه التساؤلات

ج 1/ ينظر المجتمع لهما كلٍ على حده من حيث أن الأولى فقدت الزوج لربما بمحض إرادتها والأخرى غصباً عنها وأثبتت الدراسات أن كلا الحالتين متساويتان من نظرة المجتمع إليهما والمشكلة أن المجتمع ينظر إلى نقطة واحده هي أن هذه المرأة أصبحت وحيدة وربما تجلب إلى ذويها المشاكل وهذه نظره خاطئة لأن كلا الحالتين قادرتين على العطاء سواء للمجتمع أو للأسرة ونصيحة لمن تعرضت إلى مثل هذه الحالتين نقول جددي حياتك بالمشاركة الفعالة في الأسرة والمجتمع.

ج2/ إن التي يطلقها زوجها بمحض إرادته ورغبته لها ثلاثة حقوق في الشرع والقانون وهي:

- حقها في المؤخر المسجل بعقد الزواج.
- حقها في نفقة ثلاثة أشهر وسكن ثلاثة أشهر تقريبا مادامت في عدتها من الطلاق الواقع عليها.
- حقها في بدل المتعة وهو مبلغ يتراضى عليها الطرفان يقدر في بعض القوانين بنفقة عامين وفي بعضها بنفقة عام حسب قانون كل دولة.

ويستشهد في ذلك بقوله تعالى (وللمطلقات متاع بالمعروف حقًا على المتقين) وكذلك قوله تعالى (ومتعوهن على الموسع قدره وعلى المقتر قدره متاعًا بالمعروف حقًا على المحسنين).

هذه الحقوق المذكورة سابقا فقط للمطلقة التي دخل بها زوجها أما التي لم يدخل بها زوجها ولم يختل بها فليس لها إلا المطالبة بنصف المهر وأما المطلقة قبل الدخول لكن بثبوت الخلوة الشرعية ((الدخلة الشرعية)) فلها المهر كاملا ونفقة العدة ثلاثة أشهر هذا ويجوز للمرأة أن تتنازل عن جزء من حقوقها أو كل حقوقها إن طلبت هي الطلاق وتكون المطالبة بتلك الحقوق بالتوجه بطلبها من التوجه والإرشاد الأسري ببعض الدول أو محكمة الأحوال الشخصية بدول أخرى.

وأما المطلقة التي لديها أطفال فلها الحقوق الثلاثة السابقة بالإضافة لحقوق المحضونين وهي كما يلي:

1- توفير سكن مناسب ومؤثث وشرعي للمحضونين.
2- دفع نفقة شهرية للمحضونين مأكل ومشرب وملبس.
3- دفع مصاريف علاج وتعليم للمحضونين.
4- توفير مصاريف المواصلات وأحيانا توفير خادمة حسب مستوى الدولة التي يعيشون فيها مثل دول الخليج وحسب دخل الأب.
5- دفع أجرة شهرية للأم الحاضنة التي طُلقت.
6- حق الأب رؤية المحضونين مرة أو مرتين في الأسبوع أو يترك لاتفاق الطرفين وتفاهمهما على المكان والزمان للرؤية.

الإقبال على الحياة الجديدة

الآن وبعد الطلاق، وبعد أن تهدأ النفوس بعامل الفراق وعامل الزمن تبحث الزوجة عن رفيق جديد للحياة وتصدمها الحقيقة المرة وهي أن الرجال غير مستعدين " في شرقنا العربي " أن يتزوجوا امرأة لم تستطع في تجربتها الأولى أن تكسب ودّ زوجها فيحتفظ بها، فطلقها، أو أصرت هي على الطلاق. وتصدمها الحقيقة الثانية وهي مشكلة الأولاد فمن النساء من ترضى أن تتخلى عن أولادها وتخدم أولاداً غير أولادها إن هي تزوجت رجلاً أرمل أو مطلقًا مثلها – لن يتمكن من سد حاجيات أطفاله وأطفالها معاً - بالإضافة إلى غيرته من هؤلاء الأطفال كلما رآهم، لأنهم يذكّرونه دائماً بأن أمهم كانت لرجل قبله.

وتصدمها الحقيقة الثالثة وهي أن أهل المطلقة نفسها ومحيطها لا يقبلون لها حياة العزوبية للاستقرار أولاً وخشية كلام الناس ثانيًا، فالمرأة المطلقة لا مكان لها .

الطلاق الرجعي، هوا لطلاق الذي لا يحتاج فيه لعودة الزوجة لزوجها إلى تجديد العقد ولا المهر ولا الإشهاد ولا ترفع أحكام النكاح، وتتمثل في:

1- الزوجية قائمة مادامت المرأة في العدة واختلفت الآراء حول دخوله عليها والاستمتاع بها والله أعلم.

2. ينفق الزوج على زوجته طوال فترة العدة.
3. إذا مات أحد الزوجين قبل انقضاء العدة ورثه الآخر سواء طلقها زوجها في حال صحته أو مرضه.
4. تراجع بدون عقد جديد.
5. تراجع بدون مهر جديد مادامت في العدة.
6. تصح الرجعة قولا راجعتك ونحوه خطابا للمرأة.
7. يلزم أن تكون المراجعة منجزة في الحال غير معلقة على شرط.
8. تنقطع الرجعة وتملك المرأة عصمتها إذا طهرت من الحيضة الأخيرة (الثالثة).
9. مدة العدة ثلاث حيضات.
10. الطلاق الرجعي أذا انقضت العدة فيه صار ما كان مؤجلا في المهر في ذمته حالا فتطالب به الزوجة.

الطلاق البائن بينونة صغرى، أذا انتهت العدة ولم يراجع الزوج زوجته انقلب إلى طلاق بائن بينونة صغرى وهو ماكان دون ثلاث طلقات، وأحكامه تتمثل في:

1. يحل عقد النكاح ويرفع أحكامه.
2. لايبقى للزوجية أثر سوى العدة.
3. تستتر المرأة في بيتها وتجعل بينها وبينه حجاب.
4. إن مات أحدهما في العدة فلا يرثه الآخر.
5. إن أراد إرجاعها فلا تحرم عليه إذا كان عدد الطلقات دون الثلاث فيراجعها برضاها بعقد جديد و صحيح وكامل الأركان كما يسمى لها مهر جديد.
6. المرأة البائنة يمنع زواجها من غيره وهي في العدة.

الطلاق البائن بينونة كبرى، هو طلاق لا يحق فيه للرجل أن يعيد زوجته إلى عصمته، ولو بعقدٍ جديد. فإذا طلقها الطلقة الثالثة، فحينها لا تحل له إن أرادا أن يعودا لبعضهما، إلا إن نكحت بعده زوجًا غيره نكاحًا شرعيًا ينويان فيه دوام زواجهما ودخل بها ووطئها، لكن حصل طلاق بينهما، فحينها يمكنها الرجوع لزوجها الأول بعد أن تقضي عدتها. ومن بين أحكامه:

1. هو الطلاق الذي يزيل في الحال الملك والحل معا فلا يملكها ولاتحل له.
2. البينونة الكبرى هو الطلاق للزوجة الحرة من نكاح صحيح ثلاث طلقات بكلمة واحدة قبل الدخول أو بعده سواء كانت الطلقات متفرقات أو غير متفرقات ويحرم عليه أن يتزوجها حتى تنكح غيره نكاحا صحيحا نافذ ا ثم يطلقها أو يموت عنها وتمضي عدتها.
3. موت الزوج الثاني قبل الوطء لا يحلها للأول.

الحكمة في عدم حل المطلقة ثلاثا لمن طلقها إلا بعد أن تتزوج بآخر هو أن إيقاع الطلقة الثالثة لا يكون إلا بعد استفحال الخصومة ولو أبيح له أن يعود بعد الطلقة الثالثة لكان عبثا في الحياة الزوجية وحتى لا يقدم عليهـــا الزوج وهـــــو يعلم ما وراءهـــــا من حكم قـــــاس تنفـــر منـــه نفســه؛ ولكـــــن يجب أن لاننســـى أبـــدا ((إن أبغض الحلال عند الله الطلاق)).

معلومــة قــانونية: - ماهي حقوق طلقة للضرر في قانون الأحوال الشخصية؟

كتبت أسماء شلبي. كثير من رواد محاكم الاسرة من الأزواج والزوجات يقعون تحت ضغط هائل بسبب الخلافات الزوجية وصعوبة الحصول على حقوقهم لعدم معرفتهم بالقواعد المتبعة في مسائل الأحوال الدعوى قضائية شخصية وهنا نرصد إجابات قانونية للرد عليها.

س / ما هو الطلال بالضرر؟

ج: عندما يقع ضرر مادي او نفسي من الزوج على الزوجة وعندما يحق لها إقامة دعوى قضائية وفقا لقانون الأحوال الشخصية. بعد اثباته بشهادة الشهود او بواسطة تقارير طبية مؤثقة، وفي تلك الحالة تستطيع الزوجة الاحتفاظ بحقوقها الشرعية والمادية.

س / احقية الزوجة المطلقة طلال بالضرر بمسكن الزوجية ؟

ج: المطلقة للضرر تستطيع الحصول على مسكن الزوجية اذا كانت خاطئة، ويكون لديها خيارين اما التمكن من مسكن الزوجية التي تزوجت به او إقامة دعوى للمطالبة بأجر مسكم بس بشرط ان تكون ام الأطفال في سن الحضانة.

س / ماحق الزوجة بقائمة المنقولات؟

ج: المنقولات المملوكة للزوجة يجب ان تكون سلمت للزوج بموجب أحد عقود الأمانة وتستطيع الزوجة الحصول عليها عند الطلاق للضرر. وإذا امتنع الزوج عن ردها لها يعرض نفسه لعقوبة الحبس.

س / حق الزوجة في نفقة المتعة؟

ج: وفق قانونا لأحوال الشخصية المتعة ليست نفقة انما تعويض وجبر ضرر لخاطر المطلقة. وتعويض عن الأمهات النفسية التي المت من طلاقها ولاتعطي المتعة لمطلقة في طلاق رجعي، كما تستحق المتعة متى ثبت الضرر بحكم تطليق نهائي طبقا للمادة 101 من قانون الاثبات ، من حق المطلقة نفقة للمتعة لا تقل عن سنتين .

س / ماهي نفقة العدة

ج: تبدا من تاريخ، أي من تاريخ إيقافه وليس من تاريخ العلم بالطلاق.

س / متي يسقط الحق في نفقة العدة؟

ج: تسقط نفقة العدة في حالات نشوز الزوجية او ارتدادها عن الإسلام او وفاة المطلقة بعد القضاء عليها.

س / حق المطلقة للضرر في المؤخر؟

ج: تستطيع المطلقة للضرر الحصول على مؤخر الصداق في قسيمة الزواج.

س / حق المطلقة بالحضانة

ج: حضانة وفقا للقانون للام حتى انتهاء سن الحضانة، وفي حالة زواج الام تنتقل الحضانة الى ام الام لم توجد تنتقل الى ام الاب ثم اخت الام ثم اخت الاب.

س / قواعد النفقة؟

ج: تقوم المحكمة في دعوى النفقة بتقدير المبلغ على حسب دخل الزوج وتقوم المحكمة بإرسال خطاب تحري عن اجمالي الدخل الشهري لجهة عمل الزوج، وكذلك خطا تحري لمباحث القسم للتحري عن أملاك الزوج، ويحق للزوجة بعد الحصول على حكم النفقة اما الحجوز على أملاك الزوج او رفع دعوى حبس ضده بتجميد النفقة.

س / ماهي كيفية تقدير النفقة؟

ج: تقدر النفقة حسب حالة الزوج المادية وحالته الاجتماعية في الوقت الذي يجب عليه فيه الانفاق في المسكن سواء كانت الام او ام الام .

س / هل يلتزم الاب بالمصروفات الدراسية للصغير ؟

ج: نعم يلتزم لان المصروفات الدراسية مثلها مثل نفقة الصغير عن ابيه بمنزلة الطعام والملبس.

س / حق المطلقة في مصروفات العلاج الخاصة بالأطفال ؟

ج: وفقا للقانون يلزم الاب بمصاريف علاج اطفاله ، وللزوجة الحق ان ترفع دعوى تطالب الاب بكافة مصاريف علاج الأطفال .

النتائج والاستنتاجات

1- الزواج المبكر أحيانا يكون غير مشجع من قبل المجتمع من خلال زواج القاصرات.

2- العامل المادي له دور أساسي لاستمرار الحياة الزوجية.

3- فارق العمر يشكل عائقا أمام استمرار الحياة الزوجية في بعض الأحيان.

4- الثقافة الدينية لها دور في تقليل الطلاق.

5- للمرأة دور أساسي في استمرار الحياة الزوجية.

6- السؤال على التدين وأخلاق شريك الحياة قبل الزواج مهمة بالنسبة للحياة الزوجية.

7- عامل عدم القدرة على الإنجاب تعتبر من عوامل الطلاق وهذا يرجع إلى عدم ثقافة المجتمع.

8- تعدد الزوجات مرفوضة من قبل النساء بنسبة عالية على العكس بما هو عليه للرجال.

6. التوصيات

1- نوصي بوجود احترام بين الزوجين لتجنب وقوع مشاكل قد تكون مؤدية إلى الطلاق.

2- القضاء على العلاقات السلبية التي تظهر بين الزوجين ومحاولة جعل العلاقات بينهم إيجابية.

3- رفع الحواجز النفسية والاجتماعية التي تخلقها المراكز بين الزوجين.

4- العمل على معالجة البيئة الخارجية التي تودي للمشاكل.

5- عدم إلقاء اللوم على الشباب فقط في انتشار الطلاق لابد من تحمل المسؤولية معا.

6- البحث الجدي عن اسباب الطلاق من غير إفراط ولاتفريط

7- الاستفادة من تجارب الدول التي نجحت في التقليل من حالات الطلاق واعتبرها قدوة.

8- الاهتمام الجاد بقيم المجتمع وتوعية الشباب الخاصة بها.

المـــراجـــــــع

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HISTORY OF POWDER METALLURGY

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Abstract

The technology of pressing metal powders into a certain shape is not new. Ancient civilizations practiced this art in prehistoric times, as testifies to the iron column in Delhi, some Egyptian tools made by the Incas, and items made of precious metals. Modern powder metallurgy (P/M) technology began in the 1920s with the production of tungsten carbides and mass production of porous bronze bushings for bearings. During the Second World War, further developments took place in the manufacture of a wide variety of ferrous and non-ferrous materials, including many composites and non-ferrous materials. First, the P/M process is a fast, economical and high-volume production method for making precision components from powders. Over the last decade, powder forging technology has proven itself to transform powders into precision engineered parts with comparable properties. In this investigation, the development of powder metallurgy, which has many advantages over traditional production techniques, is summarized, after drawing attention to previous studies, various developments and application areas that have caused the full concentration of powders in recent years are examined. Some novel shaping processes (such as injection molding and extrusion) and full density processes (such as cold isostatic pressing CIP and hot isostatic pressing HIP) will also be highlighted for the sake of comparison.

Keywords: Powder metallurgy, sintering, tungsten carbide, titanium alloys, steels

INTRODUCTION

Powder metallurgy, a young but extremely important branch of modern technology, is concerned with the production of metal powders and various articles made from them. In powder metallurgy, a mixture of prepared powders is compressed in molds under a pressure of 10-100 kg/mm2. The resulting semi-finished object (pressing) has strength, although it is insufficient. It allows the transport of the item to be used to the next technological process. The final mechanical strength of the material is only achieved as a result of the sintering - high temperature process carried out at a temperature below the melting point (66-75 percent of the melting point) of the base metal entering the mixture.

The development of powder metallurgy is due to the great advantages it has. The powder metallurgy process provided a practical solution to the problem of producing refractory metals, which became the basis for making refractory materials and cutting tools of extreme hardness. It is impossible to melt such materials on an industrial scale and produce products from them by normal methods, because it is difficult to choose a furnace lining that does not melt at high temperatures (for example, tungsten has a melting point of 3400°C). Powder metallurgy by itself enables the making of alloys from metals that cannot be melted by

ordinary methods due to liquefaction and are insoluble in each other. This is when the melting points of the metals that make up the alloy are very different, for example tungsten and copper (3400°C and 1083°C), iron and lead (1535°C and 327°C) etc. It is also possible to produce materials containing non-metallic substances and bimetals. It is also possible to obtain porous materials by powder metallurgy (German, 2005; Aslan et al., 2021).

Modern cutting tools made of hard alloys, obtained through powder metallurgy, have revolutionized metal cutting and mining; metalworking speed increased tenfold. Various anti-friction materials, as well as porous bearings, filters and many other products are successfully used in industry. Powder metallurgy allows products to be made from both the heaviest metals (tungsten, uranium) and the lightest metals (beryllium, porous aluminum). We can produce materials with a wide range of properties from metal powders. With powdered iron, depending on the technology, we can obtain materials with mechanical properties corresponding to cast iron, bronze and even lead.

Another important advantage of powder metallurgy is its ability to produce without the need for secondary processing. This advantage particularly evident in mass production, because here a series of economic advantages. So, for example, in the manufacture of gears by powder metallurgy, the technological process consists of simple operations; achieving powder pressing, sintering and sizing. The usual method of manufacturing 1000 gears requires approximately 30 hours of work by a skilled worker, whereas manufacturing by powder metallurgy requires only a total of 10 hours of work by a semi-skilled worker.

Besides the disadvantages that complicate and restrict the use of powder metallurgy, it is necessary to mention its advantages. The main disadvantages include the high cost of metal powders. Products made from metal powders have an increased tendency to oxidation due to their porosity. Powder metallurgy products have relatively poor plastic properties (impact strength, elongation). It is not profitable to manufacture small quantities of articles due to the high cost of molds. Due to the particular difficulties in pressing powders, the size and shape of the manufactured products are limited.

The role played by powder metallurgy in technology is expanding day by day. At present, the output of powder metallurgy products is not large. 1 kg of iron powder product is equivalent to 2-4 kg of cast metal (due to no metal loss in processing and lower specific gravity, etc.); 1 kg of hard alloy (for cutting or pressing tools) replaces 10 kg of high alloy tool steel.

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The aim of this study is to investigate the powder metallurgy from the historical point of view. To do that, controlling microstructure, forming and compacting of powders are also reviewed. Then, the most important part to have the strength property from the powders is sintering process. Therefore, sintering stage is also discussed. Finally, novel shaping such as layer technologies as well as having the full density using CIP and HIP processes are also criticized.

HISTORICAL

It can be said that powder metallurgy is as old as the pyramids. In ancient times, items were sometimes made by hot forging a sintered powder mass. Daggers decorated with gold dust were found in the tomb of Egyptian Pharaoh Tutankhamun, who lived in the 14th century BC. There is evidence that the Incas made products by sintering powders of precious metals long before the discovery of America by Columbus. The temple in Delhi (India), built in the fourth century AD, was decorated with pillars weighing 6-5 tons made by forging hot reduced pieces of iron, since it was impossible to reach the fusion temperature during the reduction of iron ore with carbon.

However, all these materials and objects were obtained not by the modern method of sintering of pre-compressed powders, but by hot forging of a sintered powder mass (Aslan et al., 2021).

The first industrial application of modern powder metallurgy methods was made by the leading Russian scientist-metallurgist Petr Grigor'evich Sobolevski.

At the beginning of the nineteenth century in Russia, attempts were made to use metals with high melting points in industry. However, it turned out that the furnaces available at that time were not suitable for melting such metals. Thus, for example, platinum with a melting point of 1773°C can be found in roundabout ways - by melting alloys with arsenic and then removing the arsenic during prolonged calcination in an oxidizing atmosphere; in this way, arsenic lowers the fusion temperature of platinum-containing alloys. But it was impossible to obtain useful amounts of platinum by these imperfect means; moreover, arsenic is extremely harmful to the health of workers.

At that time, rich platinum deposits were discovered in the Urals. The Russian mint decided to print its money from it. Methods of obtaining malleable platinum were still unknown, and for the rapid development of the platinum industry it was necessary to develop a technology to obtain it. This problem was successfully solved by P. G. Sobolevski with the help of V. V. Liubarski.

One of the major challenges facing P. G. Sobolevski and his lab was finding a purification method and production technology for malleable platinum. At first, Sobolevski tried the method of smelting platinum with arsenic (Akhard's method). Convinced that it was not perfect, he attempted to explore a new way of making metallic items.

Moving completely away from melting platinum, Sobolevski filled the purified sponge platinum, obtained by chemical treatment of natural compounds, into a mold and compressed it with a press, then heated (sintered) the compressed product and pressed it again. As a result of this work, the appearance of the metal changed and solid platinum products were obtained. The first commercial products from platinum powder were made by P. G. Sobolevski in collaboration with V. V. Liubarski on May 24 (12, old style) May 1826.

This method was in no way different in principle from modern methods for making compact metals by powder metallurgy.

Platinum has been produced by powder metallurgy for eighteen years. After that, powder metallurgy was forgotten until the end of the nineteenth century. At the end of the nineteenth century and the beginning of the twentieth century, a spur to its industrial development was given by the development of methods of obtaining metallic wire for incandescent electric lamps.

However, it was impossible to make tungsten filament.

Tungsten melts at a temperature of 3400°C. At first, malleable tungsten was obtained by extruding filaments. Later, a method was developed to produce the incandescent filament. It consists of: tungsten powder is compressed into rods, which are then sintered at a high temperature, forged and drawn into a wire in the hot state. With the discovery of this process, the process of rapid development of powders began (German, 2005).

The use of copper-graphite brushes in dynamos and electric motors was discovered almost simultaneously with incandescent filaments. In the 1920s, methods were developed for producing contact materials by powder metallurgy (tungsten copper, tungsten silver, etc.); Magnetic cores made of iron powder appeared at the same time.

In the first experiments, the mechanical strength of sintered pure tungsten carbide was not high enough and therefore a small amount of cobalt. It began to be added to tungsten carbide as a hard binder. As a result, the hardness of tungsten carbide and the metallic qualities of hard cobalt were successfully combined. Thus, the foundation for the production of modern industrial hard alloys was laid (Burke, 1985).

In 1909 it was proposed to use metallo-ceramic products for porous filters and bearings. However, porous bearings were produced on a commercial scale only two decades later.

Soviet engineers and scientists had a large share in the development of powder metallurgy. The Soviet Union will explore new aspects of powder metallurgy products and to expand the fields of employment, research was carried out in scientific institutes. The principle, due to cost reduction and the perfection of powder metallurgy technology, was now recognized as superior to conventional production methods. Powder metallurgy was playing a role, especially in the field of mechanical engineering. Therefore, in order to produce with powder metallurgy, manufacturers sometimes had to change their machines (Savitski, 2003).

MICROSTRUCTURE CONTROL

Powders have small dimensions. Small objects heat up and cool down faster than larger objects. It is therefore possible to solidify particles fairly quickly, at the order of milliseconds. This type of rapid solidification allows the fabrication of superior materials manufactured for their unique properties, from electrical contact materials to applications such as golf clubs. Rapid solidification technologies are denoted by the abbreviation RST. Powders produced by rapid solidification have different structures compared to materials cooled under slow cooling conditions close to equilibrium. In case of extremely rapid cooling, it can form metallic glasses without a regular crystalline structure. Formation options range from the production of non-equilibrium compositions in the supersaturated alloy state to new crystalline structures and amorphous metals.

The classical dendritic segregation structure is seen in the appearance of fern leaves, which is frequently encountered in metallurgy obtained by rapid solidification. The size difference between the two microstructures should be taken into account in the Figure 1. This material is in the composition of Pd40Cu30Ag30 and is a high reliability slippery electrical contact material. (The numbers given as subscripts for this material express the composition and their sum is equal to 100. However, they do not indicate components such as CH4 or H2O.) In this case, the increase in microstructure homogeneity considerably reduces the number of production steps required to create durable electrical contact from RST alloys.

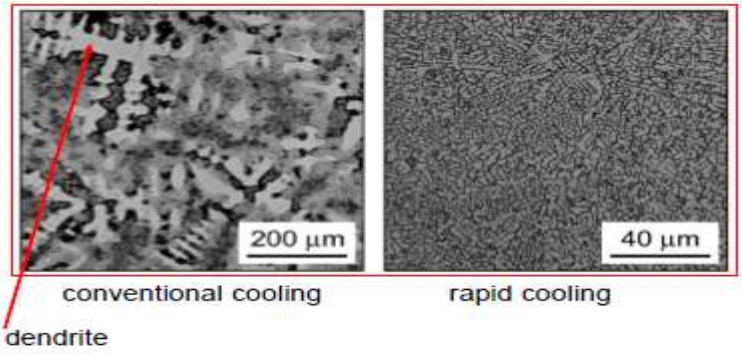

Figure 1. Comparison of microstructure for conventional cooling with the rapid solidification (German, 2005).

Microstructure of Powders

Conventional casting technology requires slow cooling. It takes one day to cool a large casting part to room temperature. On the contrary, small atomized powders have a high surface area, so it is possible to achieve cooling rates of 1000 C/s and above. For small powders subjected to turbulent flow through highly conductive gas, the cooling Rate can reach 10^6 C/s. With this change in the cooling rate, the degree of chemical segregation observed in the casting decreases.

It is the formation of the dendritic microstructure as shown in the particle section in Figure 2. In this case, nucleation radiates from the point where the melt droplet hits the solidified small particle, causing solidification with the growth of dendrites. This formation is an example of heterogeneous nucleation.

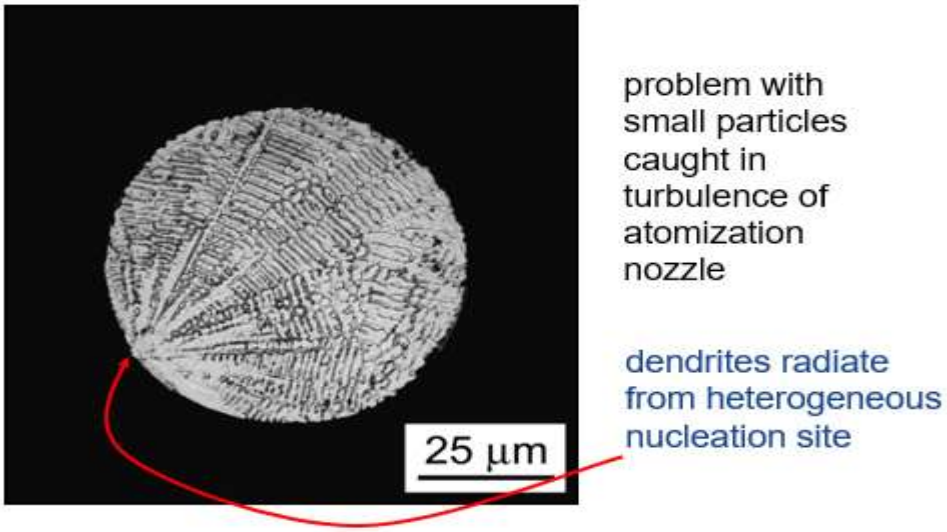

Figure 2 Optical microscope image of gas atomized particle showing dendritic structure in the surface nucleation region (German, 2005).

There is a relationship between dendritic structure and segregation; The melting temperature of the dendrites is higher than the melting temperature of the interdendritic regions. In these cases, the scale of the microstructure provides a measurement of the cooling rate. A common measurement is the distance between the secondary dendrite branches, shown in Figure 3. The microstructure allows measurement of the cooling rate as well as a rough measurement of segregation in the atomized powder.

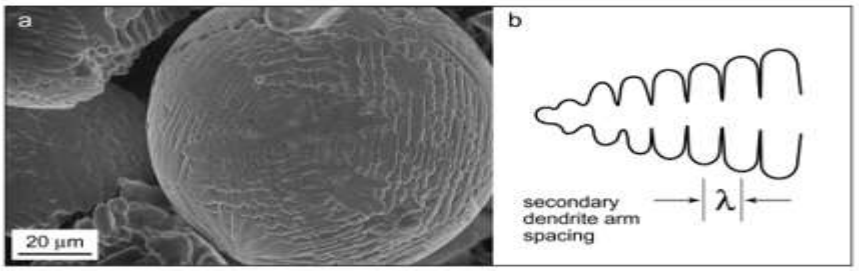

Figure 3 Microstructural description of the distance between the secondary dendrite arms (λ), (a) the dendritic surface image of the particle produced by centrifugal atomization, (b) measurement of the distance between the secondary dendrite arms for the estimation of the cooling rate (German, 2005).

Figure 4 compares the surface structure views of solidified powders with slow, medium and rapid cooling. With slow cooling, a dendritic structure is formed, faster cooling creates a homogeneous grain shape (coaxial), and very fast cooling does not provide information on grain structure or composition segregation.

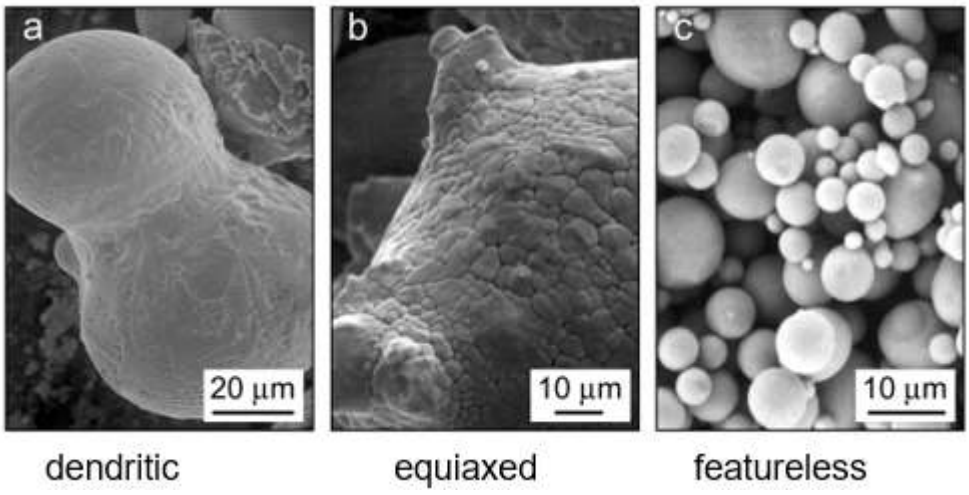

Figure 4 Comparison of powders obtained by different production methods; a) Centrifugal atomization and dendritic structure, b) inert gas atomization and coaxial microstructure, c) high velocity gas atomization and featureless microstructure (German, 2005).

Atomization limitations

For particle sizes of 10-100 microns, the cooling rate is approximately 10^4-10^5 °C/s, although in some cases this value may be 10^6 °C/s. In very rapid cooling using the substrate, heat output rates of 10^6 J/m^2.s.C are provided. Water atomization allows rapid cooling and

homogeneous structures are formed. However, rapid cooling causes the formation of irregular particles, and in water cooling, oxygen pollution is often seen in dusts. Therefore, gas and water atomization composition is used to produce near-spherical RST powder (German, 2005).

Nano-sized structures It is a striking example of the cooling of the steam at the point where it condenses directly to the solid and RST. Similarly, the material is evaporated and solid precipitates are obtained as very small crystals away from the heat source. In the case of heating in a vacuum environment, the steam moves away from the source and condenses, generally cooling to the desired collection points on the cold surface. As an alternative, the powder is heavily ground and mixed at an atomic scale, making the powder extremely fine in terms of grain size.

COMPACTION OF POWDERS

When powders are pressurized; They are first condensed by sliding the particles over each other and then by deformation of the particle at high pressures. Density increase is rapid at first at low pressures, but as the pores close, the powder increasingly resists condensation. Particle hardness is an important parameter for compaction.

The dust starts in apparent density and each particle is in contact with 4-6 neighbors. At this stage, the powder does not have any bond strength. As pressure is applied, the particles settle, change shape and form bonds. Because strain increases the hardness of the particles, higher pressure is required to maintain compression. As a result, the material hardens to a point of no return. Very hard and very soft powders are compressed at lower pressures.

The mold provides the cavity where the powder will be filled and compacted. The state of the lower punch during filling is defined as the filling position and determines how much powder is filled into the mold. The powder is filled into the mold cavity by means of the filling shoe. Any change in the flow of the powder will affect the part to be printed. At the end of the filling, the lower punch is pulled to the lower point so that the powder is in the center of the mold during compaction. Densification occurs when the punches move under force towards the center of the die. Finally, the upper punch retracts and the lower punch pushes the part out. There may also be cores inserted into the punches to create holes in the part.

Compressed powder is called “raw part”. Density after pressing is called “raw density” and strength after pressing is called “raw strength”. The process in which the pressure is made from both the upper and lower punches is called "double action pressing". If pressure is applied from a single punch, the part is less homogeneous in density and this process is called "single action pressing". After pressing, the blank is mechanically locked inside the mold. The force that will remove the part from the mold is called the "ejection force". Here the lubricant is very effective. As the lubricating effect increases, both the ejection force and the mold wear decrease. There are many methods of compression in the mold:

• Using hard and soft molds,

• Heating the mold and powder,

• Lubrication of powder or die alone and changing the applied top pressure, strain rate or pressure dwell time.

Cold isostatic pressing (CIP) is preferred for stepped and complex shaped parts or parts with a large aspect-to-diameter ratio. In the CIP process, the powder is sealed in a flexible mold.

This powder-mold combination is compressed in a container with a liquid such as oil or water. Generally, lubricants are not used. However, some paraffin can be added to increase the raw density of hard metals. CIP is usually done at pressures below 420MPa, although compression pressures up to 1400MPa are possible.

SINTERING

Sintering is a heating process that binds particles together, resulting in a significant increase in strength and improvement in properties. In this section, the important events at the atomic level that explain sintering are emphasized. In addition, the change of microstructure is explained to show how the changes in grain and pore structure during sintering affect the development of densification and properties. Various sintering processes are also mentioned, including liquid phase sintering and accelerated sintering techniques (German, 2013).

Sintering Fundamentals

Sintering enables particles that come into contact with each other to bond together at high temperatures. This bonding can occur by atomic motions in the solid state below the melting temperature. But in many cases, it is accompanied by the formation of the liquid phase (German, 2014). On the microstructure scale, the bonding is manifested by necking between the contacting particles. In the scanning electron microscope, the solid neck formation is seen between spherical particles. This type of necking increases the strength to raw strength.

It allows the increase in rate and the development of many other useful features.

Sintering takes place with the diffusion of atoms at high temperature and the reduction of surface energy of small particles. As it will be remembered, powder production is the process of creating surface area or surface energy by energizing the material. This surface energy is removed by sintering. The surface energy per unit volume is inversely proportional to the particle size. Therefore, small size particles with higher specific surface area have higher energy and sinter faster. However, not all of the surface energy is spent on sintering. In crystalline solids, almost all particle contact points form the grain boundary with energy. Thus, while neck growth decreases the surface energy, it increases the grain boundary energy. Naturally, this only happens when the decrease in surface energy is greater than the increase in grain boundary energy (German, 2016).

Sintering is mainly studied in terms of driving forces, mechanisms and stages:

• The driving forces of sintering define the microscopic curvatures that cause bonding.

•Sintering mechanisms define the path of atomic movements that occur in response to driving forces.

• Sintering stages define the geometric development resulting from atomic movements. These phases, on the other hand, change the driving forces.

No atomic motion is observed during sintering, but since volume changes occur, the process is generally followed by these changes. Neck growth is one of them. One of the key measures of sintering is the neck size ratio, as defined in Figure 5, X/D is the neck diameter to particle diameter ratio. Also, the surface area decreases rapidly during sintering (it is the ratio of the change in surface area to the initial surface area). It is monitored by the dimensionless parameter. Surface area microscopy analysis| It is measured by gas adsorption or gas permeability techniques.

Besides, during sintering, properties such as size, density, strength, hardness, electrical and thermal conductivity, and elastic modulus occur in many raw parts. Therefore, volume properties can be used to monitor the sintering process and show similar variations with temperature and time as shown in Figure 5.

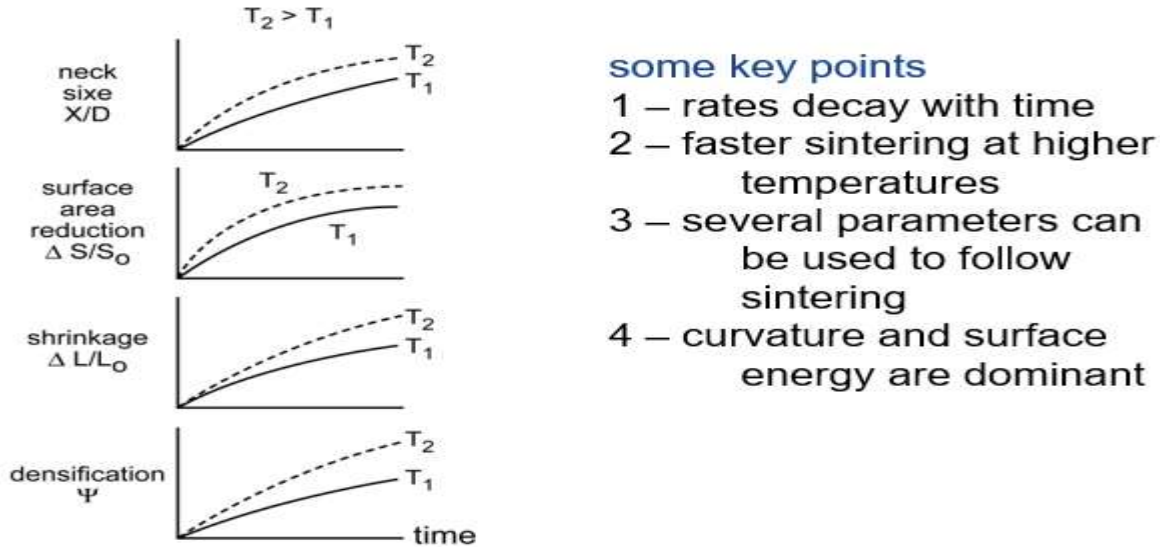

Figure 5 Multiple measuring of sintering (German, 2013).

NOVEL SHAPING

Toolless Production Concept

•Powder technologies have always focused on overproduction. In such cases, durable tools are manufactured to produce large numbers of the same piece, sometimes even 1 million pieces per year. Tooling cost is made economical by producing a large number of parts. However, in many applications only a few parts are required to be produced. This often causes problems. Although powder techniques provide special materials and microstructures and superior performance, tooling costs limit the application only to large volume productions.

•To overcome the tool cost barrier, a set of manufacturing techniques has emerged. These include the following different techniques:

•Removing methods: Removing chips from large blanks before sintering,

•Additional methods: Production is controlled by a computer, powders are adhered to the desired raw shape and then sintered,

•Direct manufacturing methods: A computer-controlled laser or other energy source creates the desired shape directly at high temperature,

Spray manufacturing methods: Melt droplets or high-speed particles are used to manufacture the desired part.

Supporting free-form manufacturing methods is the ability to match the picture of the part to be manufactured on the computer with the manufacturing method. In most cases, the design

on the computer is transferred digitally to the machine that will perform the manufacture. Thus, toolless and even paperless production is made.

Layer Technologies

When the layers are stacked, the desired shape emerges. As one of the first applications of this method, the process of slicing a three-dimensional object on the computer can be shown. The resulting two-dimensional slice is profiled from the adhesive paper by laser cutting. Each subsequent computer slice is selected to be compared with the paper thickness. After each cut, the paper sheet is stacked on the three-dimensional model. This process was successful in terms of size, shape and fit analysis in architectural models and engineering design of the proposed buildings (German, 2005).

Later, layer technology turned to laser and UV light-curing polymers to make three-dimensional objects from layers.

It created the platform to produce layers from metal and ceramic powders. There are two types of transaction paths:

- Spreading the powder layer and then sticking it to the two-dimensional profile

-Creating a two-dimensional powder layer and then layering the profile accordingly to the existing layer

Because each layer is of a certain thickness, some curved surfaces may be in the form of stair treads. After layering, the shaped powder mass is freed from binders and sintered. The raw shape is made slightly larger, taking into account the shrinkage in sintering.

Main Uses: Plastic injection mold prototypes, rocket engine parts, hard metal oil drill bits, production of artistic shapes and jewelry

•Laser: A three-dimensional object is shaped by attaching polymer-coated powder layers together. In any slice considered in the body, the free powder-polymer mixture is heated by laser. The laser power is adjusted to melt the polymer so that an adhesive bond is formed between the particles that make up the raw mass. A laser beam is sent to the areas that need to be bonded. Dust in the areas where the laser beam is not sent is released in an unadhered state. Then the powder layer corresponding to the next slice is laid on the object and the laser bonds the new layer in the same way. The object is given its final shape with layers made one after another.

FULL DENSITY

This part provides a basic introduction to the various aspects of full density powder metallurgy, including properties, applications, processing methods, and process parameters.

Advantages of Full Density

- properties improve with removal of pores
- composites consolidation (unsinterable)
- heating makes densification easier
  - most materials soften on heating
  - most materials are more ductile on heating

  - most materials exhibit less work hardening
- example glass
  - bottles are formed hot where glass is soft
- full density processes
  - combined temperature and pressure

Disadvantages of Full Density

- extra steps
  - steps add expense
  - more opportunity for error
- expensive equipment, limited capacity
- slow cycles, costly process
- impurities hard to remove
- full density is not a guarantee of properties
  - prior particle boundaries
  - thermally induced porosity

Densification Options

- low stress and high temperature
  - sintering small particles
- intermediate stress and intermediate temperature
  - pressure-assisted sintering (hot isostatic pressing)
- high stress and lower temperatures
  - plastic flow (hot powder forging)
- very high stress and low temperature
  - explosive compaction at room temperature
  - think of a total “work” needed for densification
  - combination of thermal and mechanical work

Densification Effect

- as densification progresses
- grain growth occurs
  - faster with fewer pores
    - as density goes up

- so effective pressure decreases

– large grain size reduces densification rate

- so can reach point where grain growth is rapid and densification is slow

- microstructure damage leads to reduced properties

Hot Isostatic Pressing (HIP)

Hot isostatic pressing is a manufacturing process, used to reduce the porosity of metals and increase the density of many ceramic materials. This improves the material's mechanical properties and workability. The process can be used to produce waste form classes.

Hot isostatic pressing (HIP) is a manufacturing process used to reduce the porosity of metals and increase the density of many ceramic materials. This improves the mechanical properties and machinability of the material (Swinkels et al., 1983).

The HIP process exposes a component to both high temperature and isostatic gas pressure in a high-pressure containment vessel. The most commonly used pressurized gas is argon. An inert gas is used to prevent the material from reacting chemically. Metal selection can minimize the negative effects of chemical reactions. Nickel, stainless or mild steel or other metals can be selected depending on the desired redox conditions. The chamber is heated, which causes the pressure inside the vessel to increase. Many systems use associated gas pumping to achieve the required pressure level (Helle et al., 1985). Pressure is applied to the material from all directions (hence the term "isostatic") (Figure 6-7).

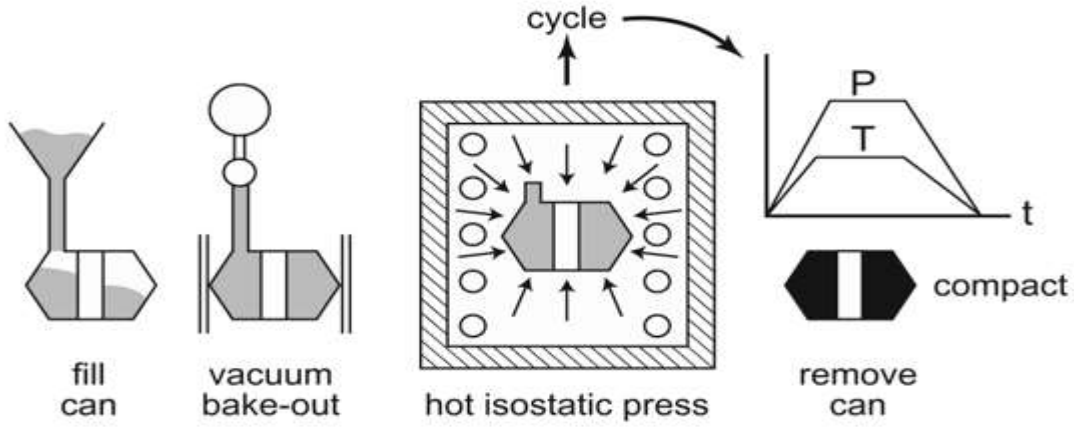

Figure 6. HIP Cycle process.

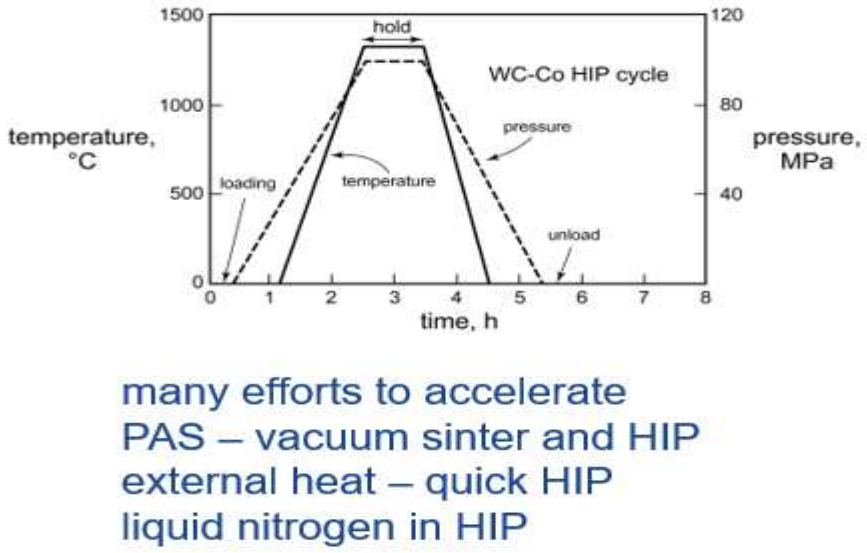

Figure 7. Pressure assisted sintering (PAS) via hot isostatic pressing (HIP).

Some Cost Comments for HIP

- hot isostatic pressing is used for high value products
  - biomedical implants, jet engine components, sputtering targets, high performance printers
- cost is dependent on size, shape, temperature, …
- usually per run costing
- load vessel with as much as possible
- asymptotic cost is probably $1.5 per kg

What Happens

- need combined temperature and pressure
  - heat from furnace or preheating
  - pressure from fluid-like material (Figure 8)
- can be applied sequentially
- most full-density processing requires simultaneous pressure and temperature

Example Full Density Microstructure

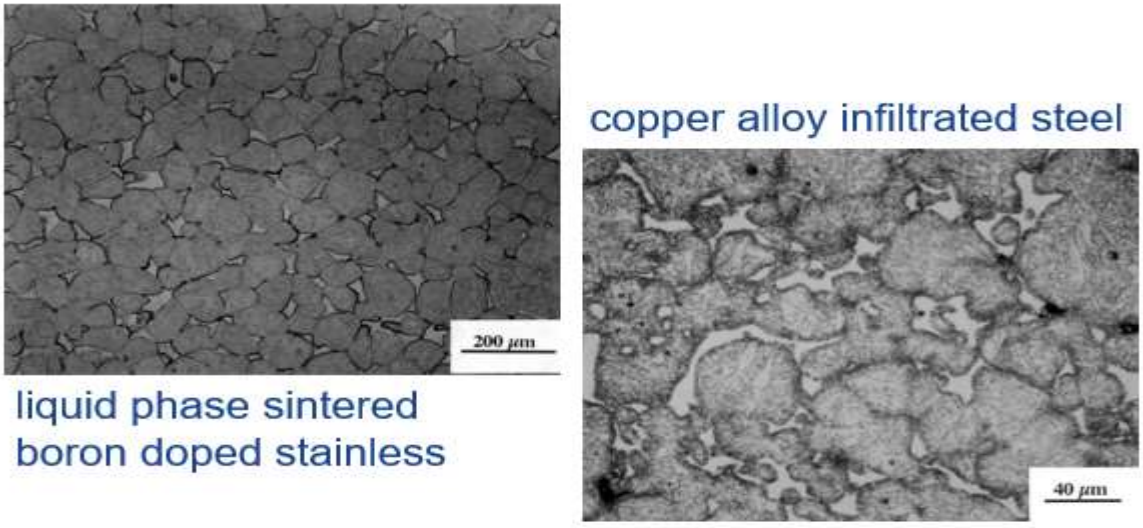

Figure 8. Liquid phase sintered boron doped stainless steel and copper alloy infiltrated steel (German, 2005).

Some Attributes of Routes for HIP and CIP (Figure 9)

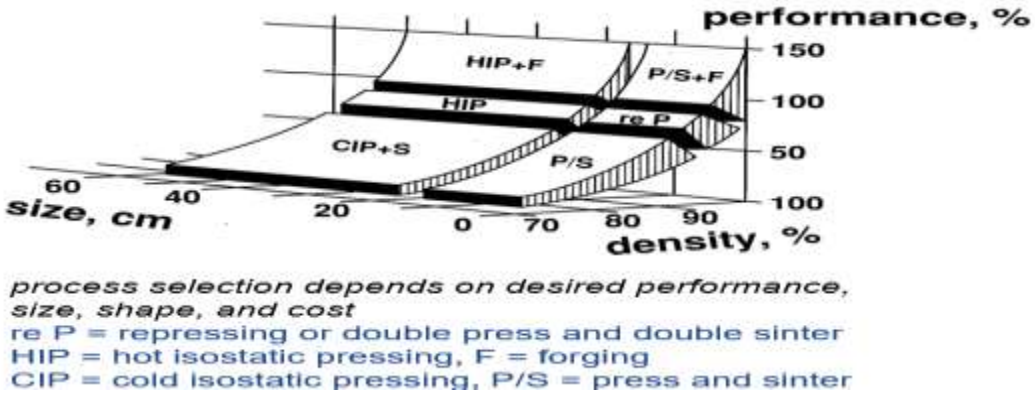

Figure 9. The density & performance relationship in CIP and HIP processes (Wilkinson and Ashby, 1978).

Spark Sintering

Spark plasma sintering (SPS) or plasma pressure compression (P2C), also known as field assisted sintering technique (FAST) or pulsed electric current sintering (PECS) is a sintering technique (Maximenko et al, 2012).

The main feature of SPS is that pulsed or non-pulsed DC or AC current passes directly through the powder compact as well as the graphite mold in case of conductive samples. Joule heating has been found to play a dominant role in the densification of powder compacts, resulting in a result close to theoretical density at lower sintering temperature compared to conventional sintering techniques (Bose and German, 1988). The heat generation is internal, unlike traditional hot pressing, where the heat is provided by external heating elements. This facilitates a very high heating or cooling rate (up to 1000 K/min) so the sintering process is usually very fast (within a few minutes). The overall speed of the

process ensures that it has the potential to densify nano-sized or nano-structured powders while avoiding the coarsening that accompanies standard densification pathways. This has made SPS a good method for the preparation of ceramics based on nanoparticles with enhanced electrochemical (Yilmaz et al, 2018), magnetic, piezoelectric, thermoelectric, or biomedical (Yilmaz et al, 2017) properties. SPS is also used for sintering carbon nanotubes for the development of field electron emission electrodes (Figure 10).

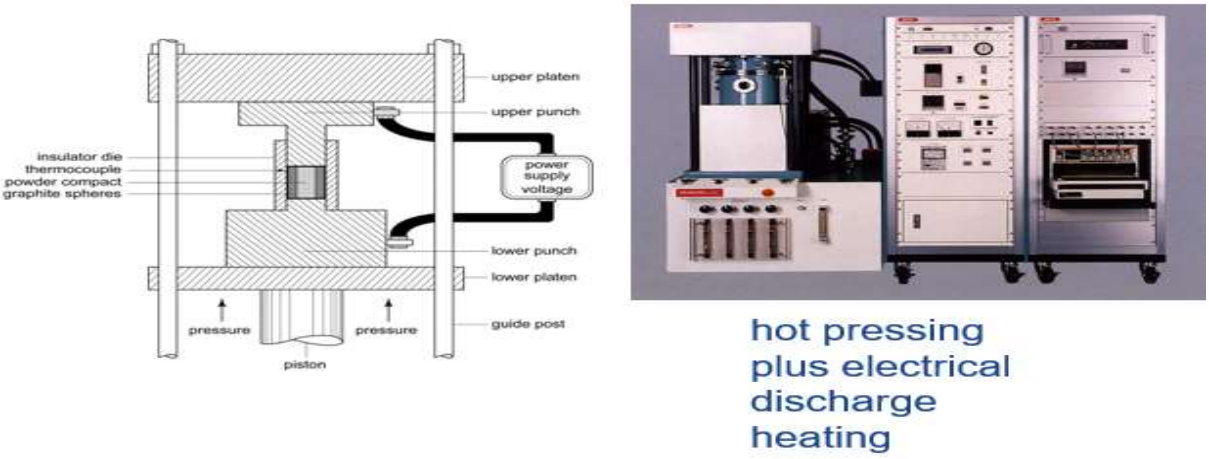

Figure 10. Spark sintering process.

Few Applications of full density techniques can be used as follows:

- diamond-metal composite cutting tools
- jet engine components
- titanium biomedical implants
- oil field drilling tips
- electrical contacts
- aluminum-carbide composites
- electronic laminates
- automotive connecting rods
- high speed printer levers

CONCLUSION

The following conclusions can be drawn the present investigation:

a. It can be said that powder metallurgy is as old as the pyramids. These ancient materials were obtained not by the modern sintering method of pre-compressed powders, but by hot forging a sintered powder mass.
b. The first industrial application of modern powder metallurgy methods was made by the leading Russian scientist-metallurgist Petr Grigor'evich Sobolevskii. Soviet engineers and scientists had a large share in the development of powder metallurgy.
c. In the 1920s, methods were developed for producing contact materials by powder metallurgy (tungsten copper, tungsten silver, etc.); At the same time, magnetic cores made of iron powder appeared.

d. Powders have small dimensions. Small objects heat up and cool down faster than large objects. It is therefore possible to solidify particles quite quickly, in the order of milliseconds. In case of excessive cooling, it can form metallic glasses with no regular crystalline structure.
e. The first factor is annual production volume, hard and machined tools are applied to large production volumes to cover engineering and molding costs. These manufacturing techniques include those capable of producing more than 100,000 parts per year or more than 40 million parts per day, such as mold compression, injection molding, and extrusion. The rigid molding method is rarely used where fewer than 10,000 parts are to be produced per year.
f. If less than 100 pieces are produced per year, the soft mold method is more economical. Examples of these methods are slurry, cold isostatic pressing, and hot thickening methods. Freeforming and raw machining techniques are suitable for productions of less than 100 parts per year.
g. When powders are pressurized; they are condensed first by the sliding of the particles over each other and then by the deformation of the particles at high pressures. Density increase is initially rapid at low pressures, but as the pores close, the powder increasingly resists condensation. Particle hardness is an important parameter for compaction.
h. Cold isostatic pressing (CIP) is preferred for stepped and complex shaped parts or parts with large aspect-to-diameter ratios. In the CIP process, the powder is sealed in a flexible mold. This powder-mold combination is compressed in a container containing a liquid such as oil or water. CIP is usually done at pressures below 420MPa, although compression pressures up to 1400MPa are possible.
i. Sintering is a heating process that binds particles together, resulting in a significant increase in strength and improvement in properties. Sintering allows particles in contact with each other to stick together at high temperatures.
j. Lately, new forming methods such as toolless fabrication and layer technologies were discovered.
k. In the layer technology, the desired shape emerges when the layers are stacked on top of each other. As one of the first applications of this method, the process of slicing a three-dimensional object can be shown on the computer.
l. Layer technology then evolved into laser and UV light-curing polymers to make three-dimensional objects from layers. It created a platform to manufacture layers from metal and ceramic powders.
m. Finally, methods such as CIP, HIP and spark sintering that provide full density have been found and applied. These are quite sophisticated methods, but these methods require expensive equipment.

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ANALYSIS OF HEAT TRANSFER IN DIFFERENT CORRUGATED CHANNELS WITH BAFFLES

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Abstract

This study examines numerically the flow and heat transfer in different corrugated channels with the vertical baffles under laminar regime. The numerical study is carried out in two dimensions with the Computational Fluid Dynamics (CFD) based FLUENT 15.0 program. The governing equations are solved using the SIMPLE algorithm. Present study is compared with the literature studies. Two different corrugated channel geometries have been considered as square and circular. The lower wall of the channel iscorrugated and kept at a constant temperature of 350 K. The upper wall of the channel is adiabatic and contains vertical baffles. Nusselt number (Nu) and friction factor (f) are calculated for different Reynolds numbers ($100 \leq Re \leq 500$) along the channel and also this study is compared to channel flow without baffles. To understand the heat transfer mechanism, the velocity and temperature contours are obtained at different Reynolds number in the corrugated channels. The numerical results show that the flow and heat transfer are significantly affected by the channel geometry. The highest Nusselt number and the lowest friction factor are obtained in the circular corrugated channel.

Keywords: Baffle, Corrugated channel, Heat transfer, Friction factor

INTRODUCTION

Researchers have been working on different methods for a long time to improve heat transfer. These methods are generally classified as active and passive methods. Passive methods are widely preferred because they have no moving parts and do not require any external energy. One of the passive methods is the use of the different corrugated channels. The other is extended surface modifications such as wing, fin, pin and baffle. These surfaces have a significant effect on heat transfer enhancement as they both increase the surface area and provide self-flow oscillation, but a slight pressure drop occurs compared to straight channels. Wavy channels with different geometries have been studied experimentally and numerically by many researchers (Akdag et al., 2014; Promvonge et al., 2015; Sahel et al., 2016; Menasria et al., 2017; Akdag et al., 2017; Ameur and Sahel, 2019; Nakhchi, 2019; Menni et al., 2019; Akdag et al., 2019).

Some researchers have used together the different passive techniques. Sripattanapipat and Promvonge (2009) researched numerically laminar heat transfer in a channel with diamond-shaped baffles. Kwankaomeng and Promvonge (2010) investigated numerically laminar heat transfer in square duct with 30° angled baffle on one wall. Sriromreun (2017) presented a numerical study on heat transfer enhancement in a rectangular duct with incline shaped baffles. Kumar et al. (2018) carried out a numerical work to enhance the heat transfer in triangular duct solar air heater due to forward facing chamfered rectangular ribs. Karabulut (2020) examined numerically heat transfer and pressure drop of different triangular baffle

placement angles in cross-corrugated triangular channels. Alnak (2020) examined thermo hydraulic performance of different square baffle angles in cross-corrugated channel. Luan and Phu (2020) investigated thermohydraulic performance and exergy analysis of a solar air heater duct with inclined baffles. Bensaci et al. (2020) carried out a numerical and experimental study to examine the heat transfer and hydraulic performance of solar air heaters with different baffle positions. Akcay (2021) investigated numerically thermo-hydraulic performance of nanofluids in a zigzag channel with baffles. Li and Gao (2021) investigated numerically flow and heat transfer for turbulent flow in cross corrugated triangular ducts with delta-shaped baffles. As a result of these studies, it has been reported that wavy channels and different surface modifications affect heat transfer positively.

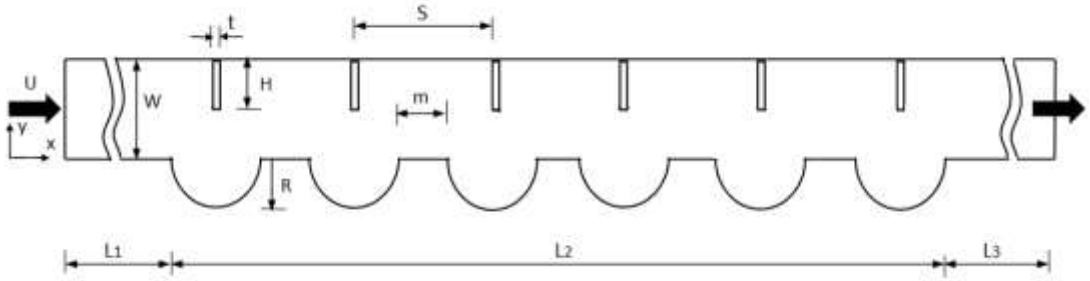
Promvonge et al. (2015) experimentally investigated the heat transfer performance in a channel where inclined horseshoe baffles were used and reported that the heat transfer increased by approximately 92-208% and the friction factor increased by 1.76-6.37 compared to straight channels. Kumar et al. (2016) experimentally studied the heat transfer behavior of the solar air channel using multiple V-type baffles. Sahel et al. (2016) reported that the different baffle design in a rectangular channel improved heat transfer by 65%. Ajeel et al. (2021) numerically examined the hydraulic and thermal properties of nanofluids (ZnO-water) for turbulent flow with L-shaped baffles in a curved wavy channel and reported that the baffles and nanofluids have a considerable influence on increasing the heat transfer rate.

There are many studies in the literature examining the combined effects of passive heat transfer applications. However, the high number of parameters used has increased the efforts to find the optimum parameters and new studies are needed on this subject. Therefore, in this study, the effects on heat transfer and friction factor of for two different corrugated channel with vertical baffles was numerically investigated.

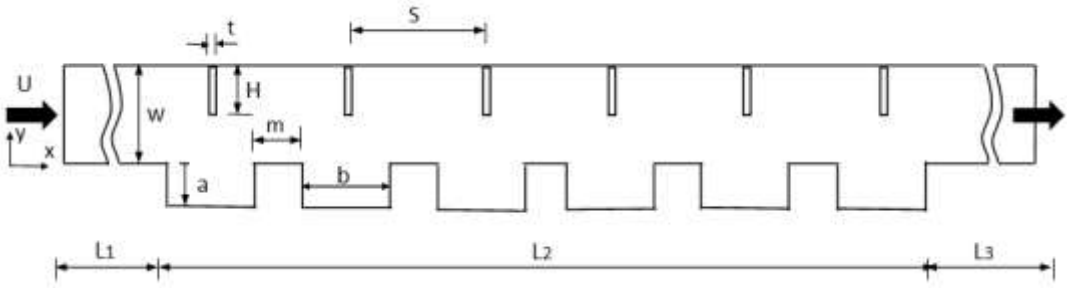
NUMERICAL STUDY

Numerical Model

The geometries of the two different channel with baffle are given in Figure 1. The numerical model is considered as two dimensional. The height of the channel (W) is 12 mm. At the entrance and exit of the channel, the lengths of unheated flat section are L_1 = 5W and L_3=10W, respectively. The length of the corrugated channel is L_2 = 11W. The distance between baffles is considered as S = 3H. The length and the thickness of baffles are H = 0.5W and t = 0.05 W, respectively. The dimensions of the corrugated channel are m=a=R=W/2 and b=W. Other geometric parameters were kept constant.



a



b

Figure 1. Geometries of the numerical model, **a**. Circular corrugated channel with baffles, **b**. Square corrugated channel with baffles.

The simulations were applied for$100 \leq Re \leq 500$. Water was used as the working fluid. The flow in the channel was considered to be laminar, incompressible, two-dimensional, steady, Newtonian type and single-phase. The heat transfer with gravity and radiation has been neglected.

Numerical Procedure and Governing Equations

The governing equations for these assumptions are given below;

$$\frac{\partial u_i}{\partial t} + \nabla(\rho u) = 0 \tag{1}$$

$$\frac{\partial u_i}{\partial t} + \frac{\partial (u_i u_j)}{\partial x_i} = -\frac{\partial p}{\partial x_i} + \frac{1}{\mathrm{Re}} \nabla^2 u_j \tag{2}$$

$$\frac{\partial T}{\partial t} + u_i \frac{\partial T}{\partial x_i} = \frac{1}{\mathrm{Re}\,\mathrm{Pr}} \nabla^2 T \tag{3}$$

Computational Fluid Dynamics (CFD) based FLUENT 15.0 (2015) program was used for numerical solutions. The equations were solved using the SIMPLE algorithm and the convergence criterion was taken as 10^{-6} for all residuals. Various tests were applied for grid independence at cell numbers of 31624, 52346, 77652, 98114, 122436. After 77652 element numbers, the difference between Nusselt numbers was determined to be less than 2%. Therefore, the element number of 77652 was used for the numerical model.

The fluid enters the channel at a constant temperature of T_o = 293 K. At the channel entrance, the "velocity inlet" boundary condition was defined. At the outlet of the channel, "outflow" boundary condition was applied. The surfaces of the corrugated channel were preserved at a constant temperature of T_w = 350 K and non-slip boundary condition for the channel walls was defined. Adiabatic and non-slip conditions were described for the upper wall of the channel containing baffles. Also, a non-slip and adiabatic boundary conditions were applied for the straight section at the entrance and exit of the channel.

RESULTS AND DISCUSSION

For the validation of the numerical solutions, present study was compared with the numerical results of Ameur et al. (2021). In the study, the heat transfer coefficient was calculated with the Reynolds number in a straight channel with a height of H=12 mm. The agreement between the results of both studies was shown in Figure 2.

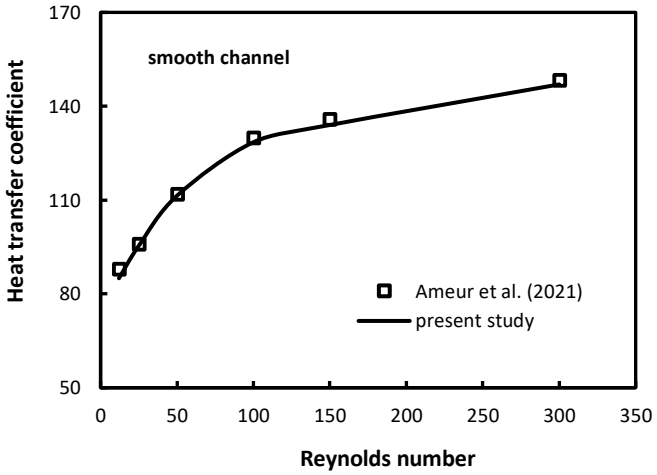


Figure 2. Verification of the numerical study.

The Reynolds number is defined given by

$$\mathrm{Re} = \frac{uD_h}{\upsilon} \quad (4)$$

Nusselt number was used for heat transfer calculations. The local Nusselt number is calculated given by

$$Nu_x = \frac{hD_h}{k} \quad (5)$$

where, D_h is the hydraulic diameter of the channel, u is the inlet velocity of fluid, υ is kinematic viscosity and k is the heat conductivity coefficient of the fluid.

$$q'' = h\Delta T_{lm} \quad (6)$$

$$\Delta T_{lm} = \frac{(T_i - T_o)}{\ln\left(\frac{T_w - T_i}{T_w - T_o}\right)} \quad (7)$$

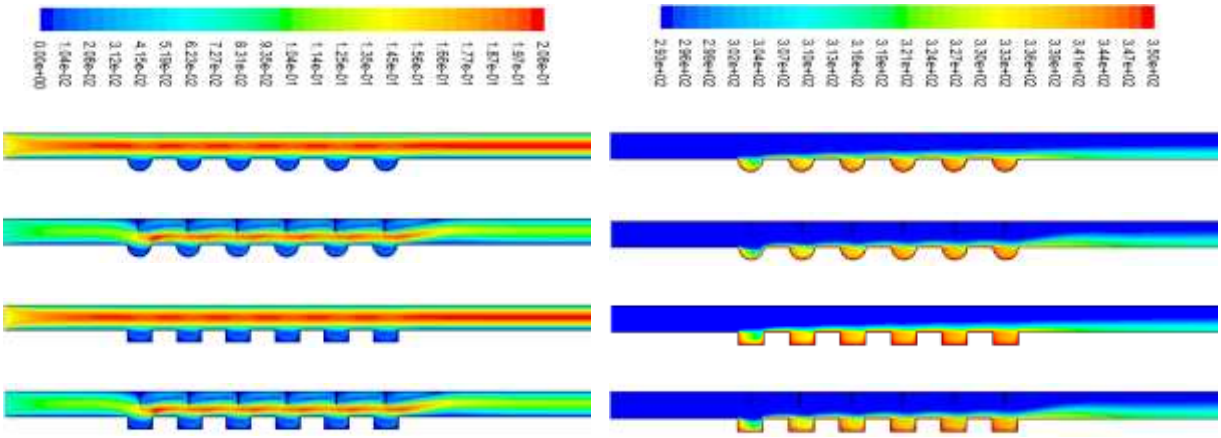
where, q'' is heat flux, h is heat convective coefficient, ΔT_{lm} is logarithmic temperature difference.

The average Nusselt number is calculated along the channel length (L) as follows:

$$Nu = \frac{1}{L}\int_0^L Nu_x dx \quad (8)$$

Baffles used to increase thermal performance in channel flows are placed in sequential or staggered arrays. After each baffle, the velocity and thermal boundary layer breaks down and these structures help create secondary flow loops. Disruption and reattachment of the flow after each baffle is reduces thermal resistance and increases the heat transfer rate. Therefore, in present study, the baffles were placed in the corrugated channels and the effects of these baffles for different corrugated channels on hydraulic and thermal behaviors were examined.

In this section, the velocity and temperature structures are obtained in the channels to explain the hydraulic and thermal mechanism. Figure 3 shows the velocity contours (a) and temperature distributions (b) in the channel with and without baffles at Re = 100. It is showed that the flow and temperature fields are affects from the corrugated channel structures depending on the baffles. The baffles formed an oscillation motion in the flow. With the oscillation movement, the cold fluid will better contact the hot corrugated surfaces. As a result of a homogeneous mixture, the surface temperature will decrease and heat transfer will increase.

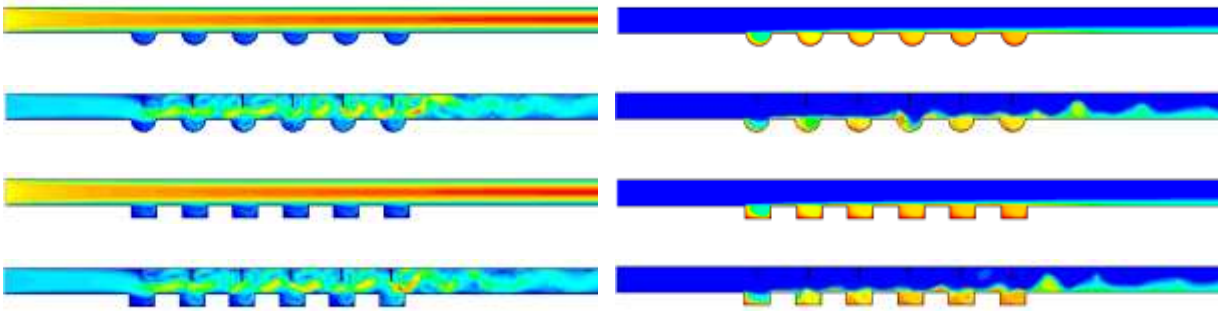


a **b**

Figure 3. a. Velocity contours, **b.** Temperature contours, (Re=100).

Figure 4 shows the velocity contours (a) and temperature distributions (b) in the channel with and without baffles at Re = 500. It is showed that the flow and temperature fields are affects from the corrugated channel structures depending on the Reynolds number. The presence of baffles in the corrugated channels caused flow separation at high Reynolds number (Re=500). The thermal resistance decreased due to the velocity at the surface and the thinning of the thermal boundary layer. So the heat transfer increased. It was observed that the surface temperature in the circular corrugated channel with the baffles was lower than in the other channels.

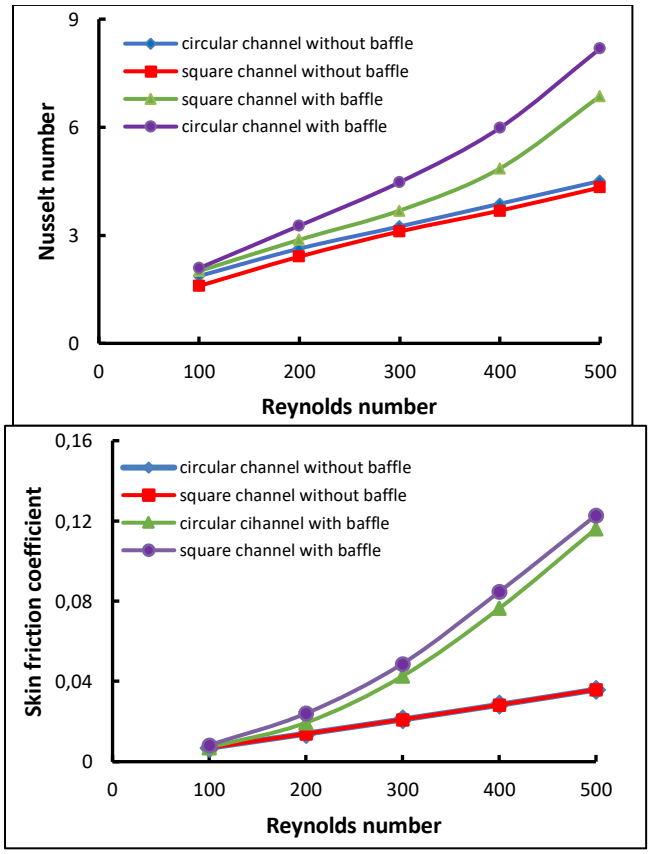




a **b**

Figure 4. a. Velocity contours, **b.** Temperature contours, (Re=500).

On the other hand, depending on the baffles and corrugated surfaces, a significant pressure drop occurs in the channel. Therefore, friction factor should also be evaluated in heat transfer improvement studies.



a **b**

Figure 5. Variation of Nusselt number **(a)** and skin friction coefficient (**b)** with Reynolds number.

Figure 6a and 6b show the variation of the Nusselt number and the skin friction coefficient with the Reynolds number, respectively. The Nusselt number and the skin friction coefficient increase as Reynolds number increases. This increase is greater in the circular and the square corrugated channels with baffles. The Nusselt number and the friction factor are almost the same in both channel flows without baffles. The highest heat transfer is achieved to be

approximately Nu=8.21 at Re = 500 and the circular channel with baffles. The maximum friction coefficient is obtained to be approximately f = 0.13 at Re = 500 and the square corrugated channel with baffles. Although heat transfer is increased with the addition of baffles, the pressure drop within the channel also increases due to the decreasing flow field effects.

RESULTS

In present study, the thermal performance and friction factor of the different corrugated channels with vertical baffles were investigated numerically. The study was also compared with the corrugated channel without baffle. The velocity and temperature contours were presented inside the channel to understand hydraulic and thermal behaviors. The numerical results indicated that the flow and thermal fields were highly influenced by channel geometry. There is significantly the effect of vertical baffles for thermal improvement. The Nusselt number and the skin friction coefficient increased with Reynolds number. The highest heat transfer was obtained as Nu=8.21 at Re = 500 for the circular corrugated channel with baffles. The highest skin friction coefficient was found to be f=0.13 at Re = 500 for the square corrugated channel with baffles. Flow and heat transfer can be investigated at higher Reynolds numbers and different baffles angles.

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ANALYSIS OF STRESS STATE IN THE CASE OF STRUCTURAL TYPE ELEMENTS RELATED TO THE FIXED DOME TANK ROOF

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Abstract

The object of the present study is the quantification of the mechanical stress states related to the geometric-structural discontinuities characteristic of the fixed roof support system related to the fixed dome type tank, using the finite element method. The analysis aims to establish the stress and strain states that appear under specific operating conditions, with the presentation of the safety coefficients related to the analyzed sections (the roof-upper course junction, the junction between the roof plates and the rafters).
The determination of the stress states in the previously mentioned areas was carried out by means of a general program based on the finite element method, which allows the analysis of beam-type structures, and takes into account all geometric discontinuities that appears in the characteristic areas of the joints between the beams and the sheet/plate type elements.
The model used for the evaluation of the mechanical stress states related to the geometric-structural discontinuities characteristic of the welded joint between the elements that characterize the dome type support system for the tank was analyzed for the maximum load of 2.6 kPa and the analysis was performed considering the nominal wall thicknesses of the investigated elements.
Based on the results obtained, were calculated the safety coefficients for the tank roof structure and it resulted that the structure presents safety in operation, at static loads. The maximum loaded area is at the junction of I180-stiffening ring U180-upper course and it is recommended that the wall thickness does not fall below the nominal values.

Keywords: tank, dome fixed roof, rafters, finite element method, stress.

INTRODUCTION

The storage tanks are vital components in oil industry and many other fields of activity. Regarding their construction, there is a variety of shapes and sizes and they can be mounted vertical or horizontal, aboveground, semi- underground or underground. The most commonly used are the cylindrical vertical steel tanks, ground-supported because they are simply in design, efficient in resisting primary hydrostatic pressure and can be easily constructed (Tanase, 2021; Matko, 2017).

Dome Roof Tanks are low pressure tanks with rounded tops. These tanks store highly volatile products at low pressures (https://www.arab-oil-naturalgas.com/storage-tanks-types/).

The domes are used to cover steel tanks for oil storage. Traditionally their construction is composed by radial elements (girders), ring-shaped elements (rings) and roof cover plates (Zdravkov and Dincheva 2011).

The object of the present study is the quantification of the mechanical stress states related to the geometric-structural discontinuities characteristic of the fixed support roof system of a fixed dome type tank, using the finite element method, under specific operating conditions, with the presentation of the safety coefficients related to the analyzed sections.

The Finite Element Method is a numerical technique in which a continuous elastic structure (continuum) is divided (discretized) into smaller but finite well defined sub-structures (element) that can be represented by simple equations (Richard, 1999).

The main advantages of the numerical calculation method are the flexibility, the fact that it allows any combination of actions and it can be used for complicated geometry (Oluleke Oluwole and Emagbetere, 2013).

METHOD

The geometric characteristics related to the analyzed elements can be found in figure 1.

The analysis of the stress states in the previously mentioned areas (see figures 1) was carried out by means of a general program based on the finite element method, which allows the analysis of beam-type structures, and takes into account all geometric discontinuities that appear in the characteristic areas of the joints between the beams and the shell type elements.

The main steps to be taken for the efficient use of such a program are the following:

• creation of a geometric model (also called the calculation model) that is as close as possible to the real structure (to contain all the elements capable of influencing the existing geometric discontinuities);

• discretization of the calculation model in finite elements of beam or solid/plate type, which should cover the entire analyzed structure and allow a more accurate analysis of its behavior;

• the introduction of forces and moments of connection in the points where the structure was isolated from the system;

• introduction of rigid connections or displacements in the support points;

• determining the stresses and displacements from all points of the analyzed structure;

• analysis of the results and formulation of conclusions regarding the resistance of the studied areas, conclusions based on the design codes.

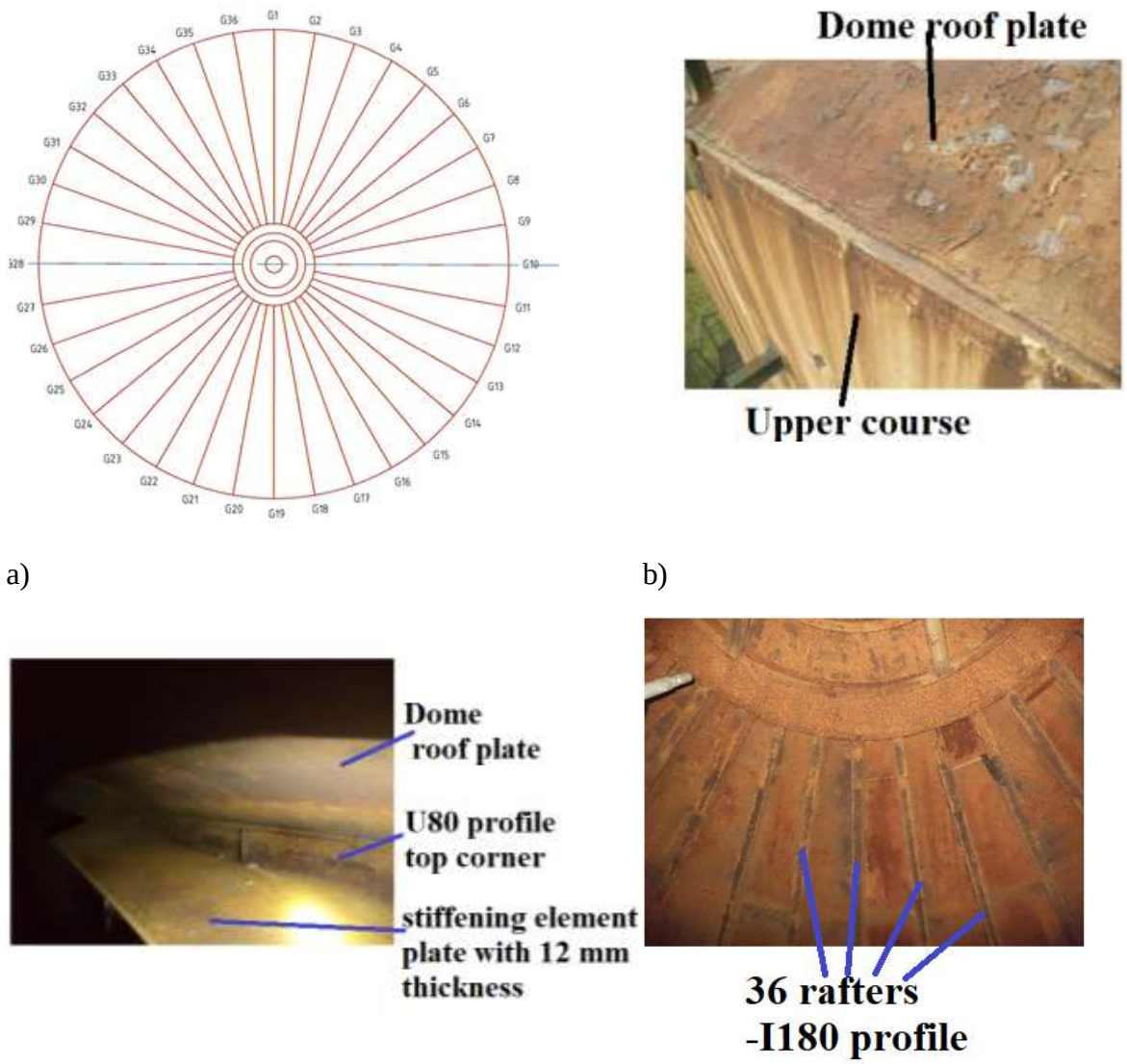
The finite element analysis of a structure (even in the case of using a specialized computer product) involves the development of an appropriate calculation model, which is as close as possible to the real structure and which, through the conditions of support imposed to simulate the real structure as accurately as possible.

Also, the material properties and the loads (temperatures or forces and external moments) must be evaluated as accurately as possible so that the loads of the analyzed structure lead to stresses and strains as close as possible to reality.

The use of programs based on the finite element method for the expertise of structural discontinuities is usually made in the following primary loading cases (the case adopted in the present study):

• loads from the structure's own weight according to API 650;

• loads that occur during the operation process (including loads from wind, earthquake and/or snow action loads), according to API 650;



a) b)

c) d)

Figure 1. The geometric characteristics related to the analyzed elements.

The model used to evaluate the states of mechanical stress related to the geometric-structural discontinuities characteristic of the welded joint between the elements that characterize the support system of the dome type roof for the tank was analyzed for the maximum load of 2.6 kPa .

The materials considered in the present analysis are:

Dome roof sheet:

Roof Type: Dome Roof Plate Material: EN-10025-S355-J2

Structure Support Type: Inside Structure without Center Column

Material Properties EN-10025-S355-J2

Minimum Tensile Strength (σ_{ut}) = 410 MPa

Minimum Yield Strength (σ_y) = 275 MPa

Beam/profile elements needed to support and stiffen the roof:

Material Properties EN-10025-S275-J2

Minimum Tensile Strength (σ_{ut}) = 410 MPa

Minimum Yield Strength (σ_y) = 265 MPa

The admissible stress results as:

$$\sigma_a = \sigma_y * 0.6 = 265 * 0.6 = 159 \text{ MPa} \quad (1)$$

Sheet metal cover in the joint area with the dome type roof:

Minimum Tensile Strength (σ_{ut}) = 365 MPa

Minimum Yield Strength (σ_y) = 235 MPa

Allowable Design Stress (σ_d) = 172.28 MPa

Allowable Hydrostatic Test Stress (σ_t) = 172.28 MPa

The beam-type elements characteristic of the rafters, respectively of the stiffening ring between the course and the roof were modelled using Beam189 type elements.

The geometric characteristics of the cross sections related to the analyzed profiles are presented in figures 2, 3 and 4.

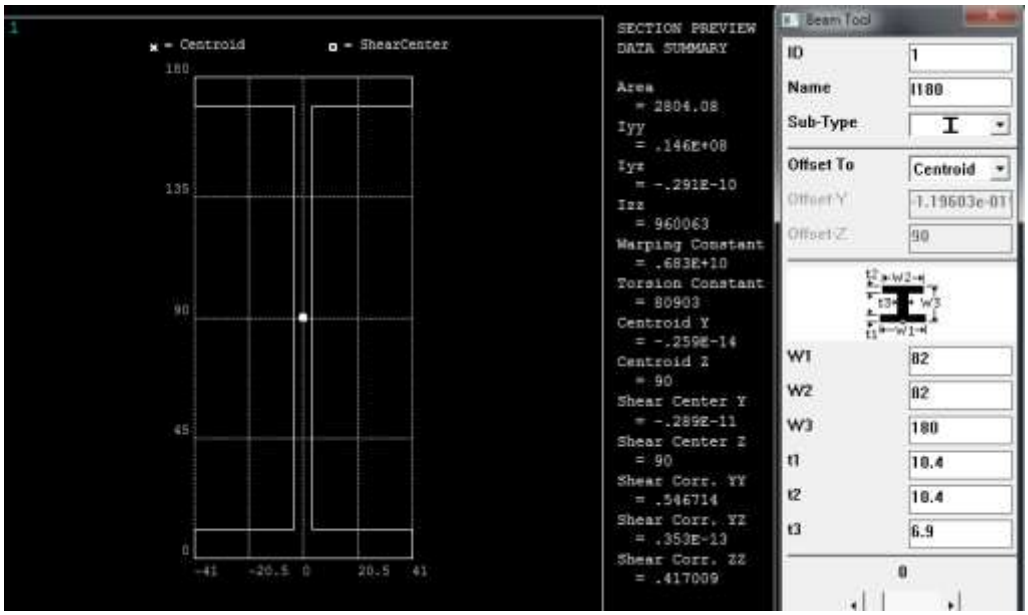


Figure 2. The geometric characterisitcs for I180 section.

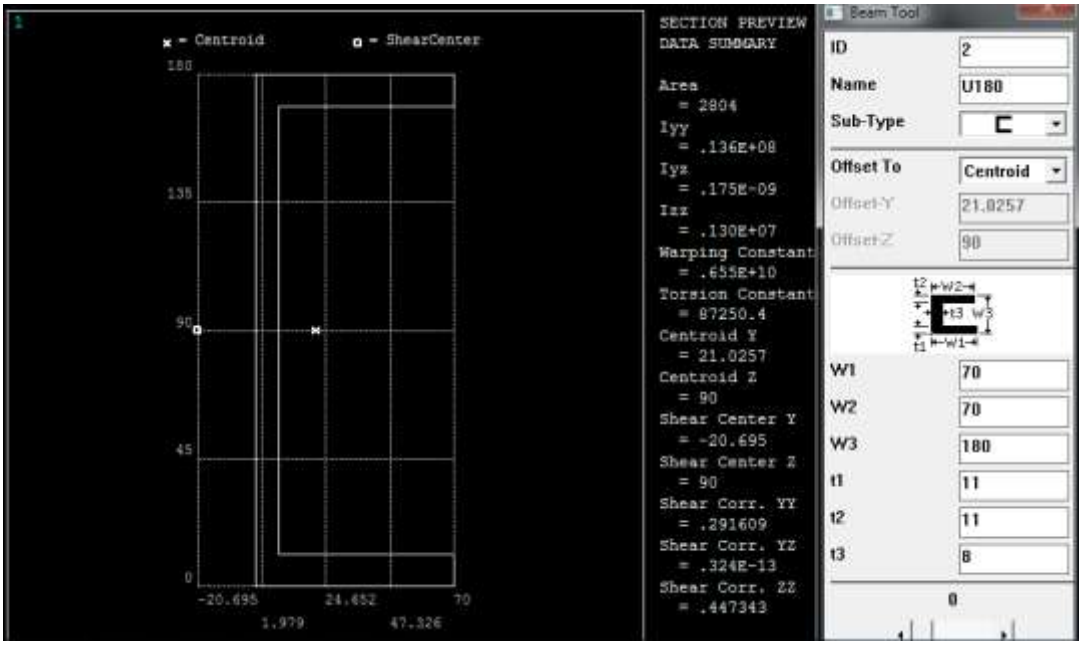


Figure 3. The geometric characterisitcs for U180 section.

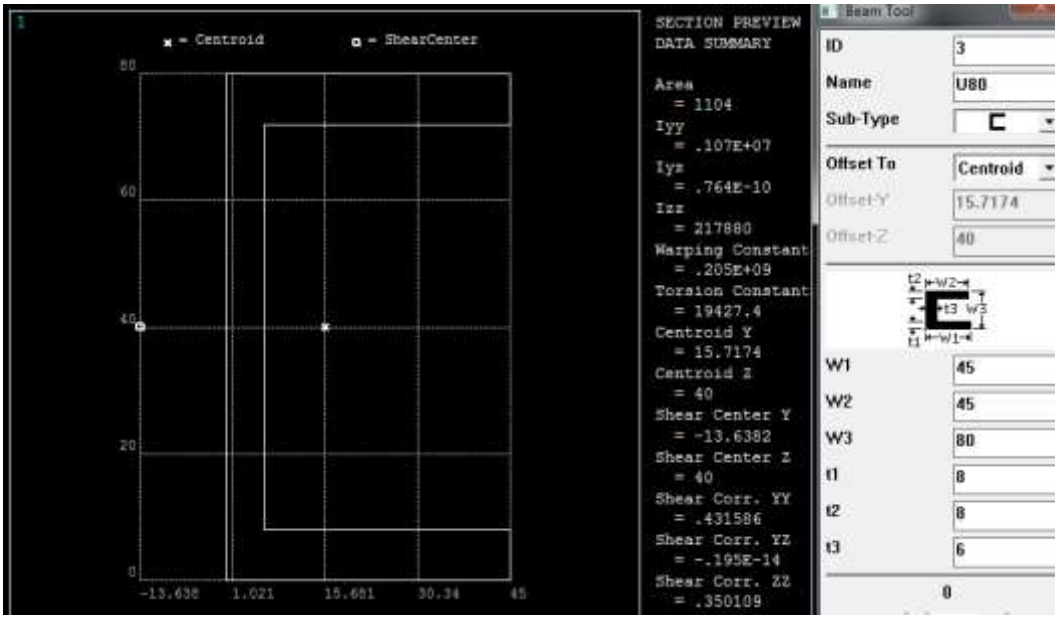


Figure 4. The geometric characterisitcs for U80 section.

Assumptions used in the analysis

• The numerical simulations were performed in the context of accepting the hypotheses of the classical linear elastic calculation of the shell type structures: a) the hypothesis of the continuous, homogeneous, and isotropic material; b) the hypothesis of small deformations; c) the proportionality between the mechanical stresses and the specific deformations; d) the modified hypothesis of the right normals;

• The analyzes performed did not take into account the possible cycles of stress and/or fatigue, the analyzes being in the static domain, not dynamic;

• All loads were considered to be applied in a static and not transient regime;

• The obtained stresses are presented as mediated values on the nodes of the finite elements, in the model being introduced only beam type elements;

• The areas related to the welding seams were not specifically analyzed. The welding seams were considered to have the same characteristics as the base material;

• Material used in the construction of profiles, EN-10025-S275-J2;

• Due to the geometrical symmetry as well as the loads, only a quarter of the dome type roof area was modelled;

• The cover structure was analyzed for the maximum load of 2.6 kPa;

• The analysis was performed considering the nominal wall thicknesses of the investigated elements.

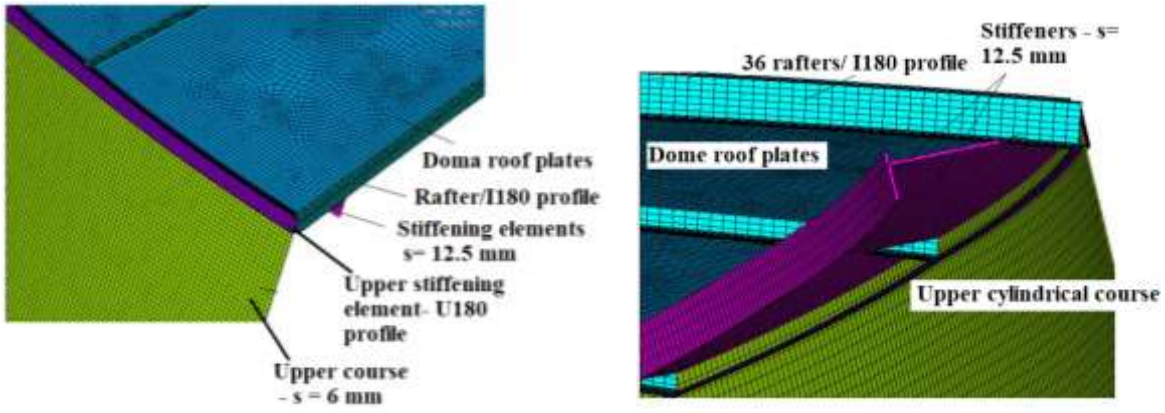


Figure 5. Finite element model, isometric view.

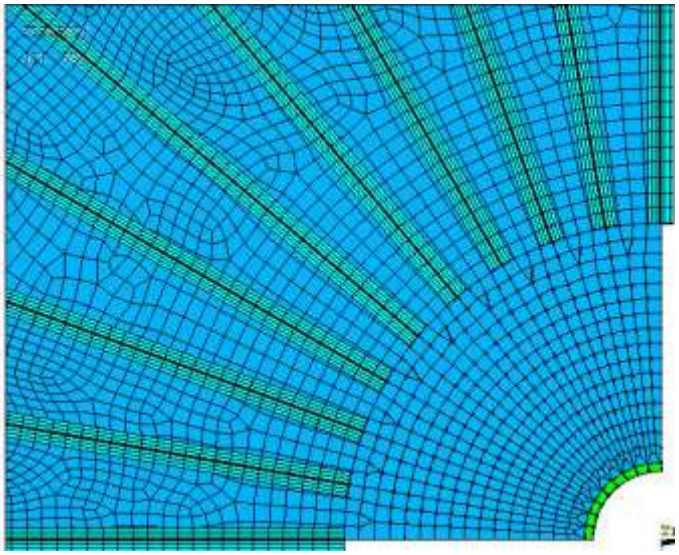
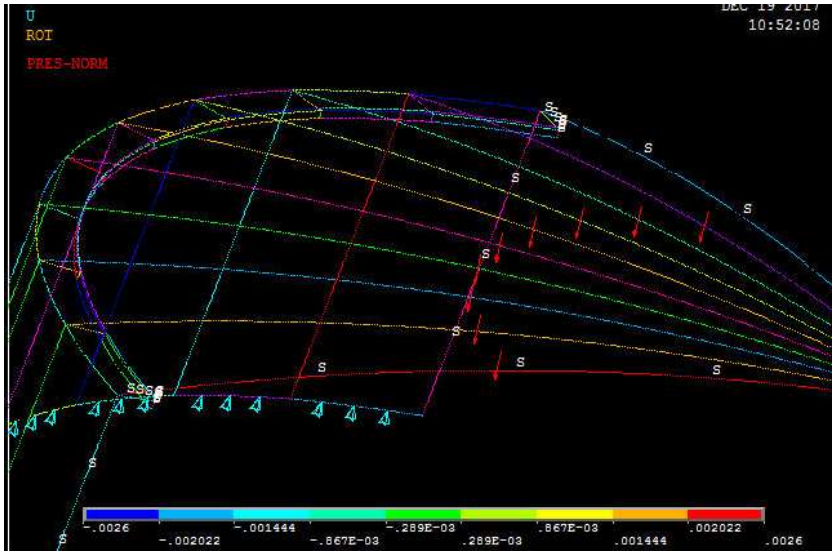
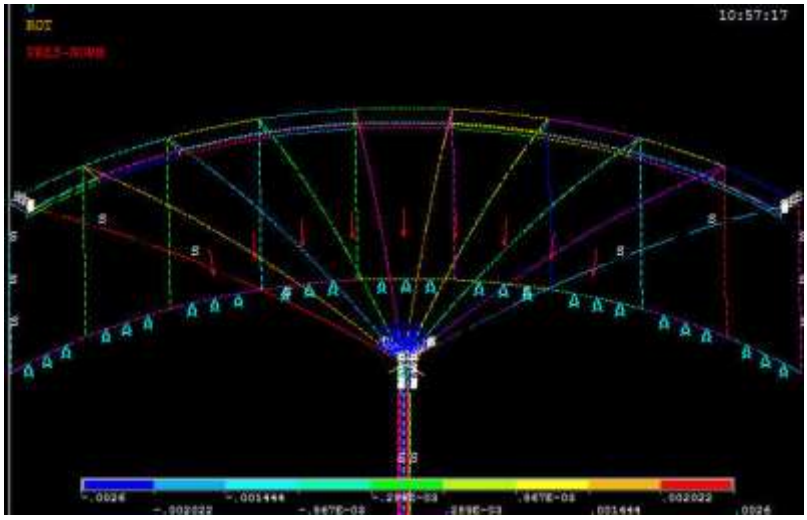


Figure 6. Finite element model, central column area.

The boundary conditions applied to the dome type roof are made on the basis of symmetry criteria, and the maximum applied load was 2.6 kPa, as shown in Figure 7.



a)

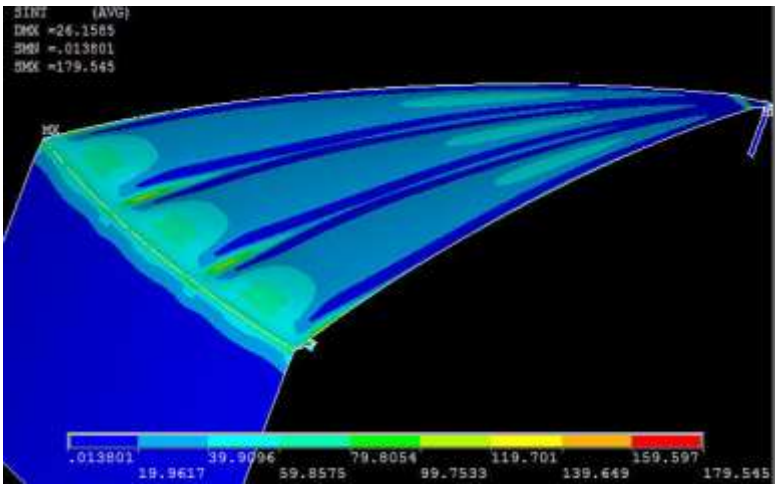


b)

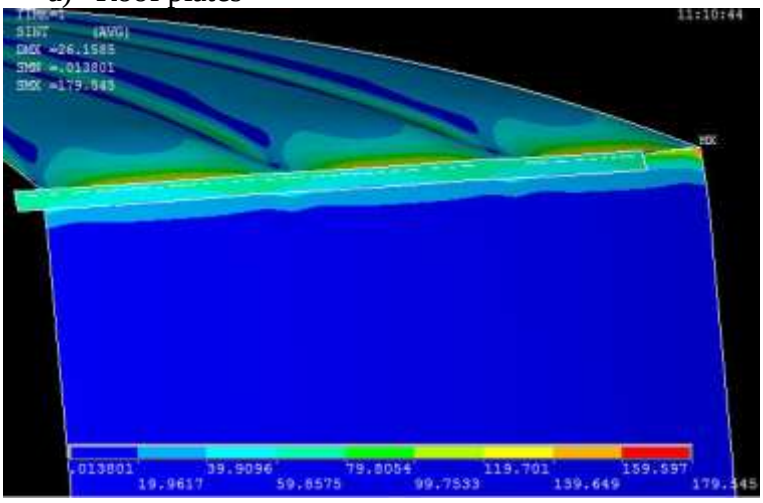
Figure 7. The action of the maximum load of 2.6 kPa on the dome type roof.

NUMERICAL SIMULATION RESULTS

The results obtained are presented in the figures 8 and 9.



a) Roof plates



b) Upper tank course

Figure 8. The maximum equivalent stress.

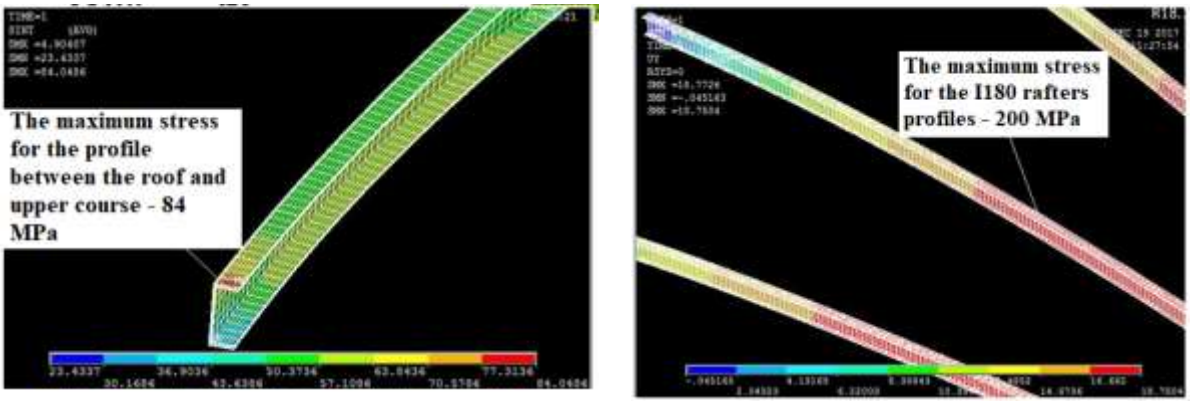


Figure 9. The maximum equivalent stress for the beam type elements.

EVALUATION OF SAFETY COEFFICIENTS FOR THE ANALYZED MODEL

Based on the results, the safety coefficients were calculated.

The safety coefficient at static loads is given by the ratio between the admissible limit of the material and the value of the maximum stress obtained from the calculation:

$$C_s = \sigma_a/\sigma_{max} \quad (2)$$

In the case of the elements related to I180 profiles, the safety coefficient at static loads is:

$$C_s = \sigma_a/\sigma_{max} = 159/20 = 7.95 \quad (3)$$

In the case of the elements related U180 profile, the safety coefficient at static loads is approximately 1.8.

$$C_s = \sigma_a/\sigma_{max} = 159/85 = 1.8 \quad (4)$$

In the case of sheet metal elements (course and petals), the safety factor for static loads is approximately 1.

From the analysis of the values of the above coefficients it can be seen that the structures have safety in operation, at static loads.

CONCLUSION

The object of the present study is the quantification of the mechanical stress states related to the geometric-structural discontinuities characteristic of the fixed roof support system of the dome type tank, using the finite element method. The analysis aims to establish the stress and strain states that appear under specific operating conditions, with the presentation of the safety coefficients related to the analyzed sections (the roof-upper course junction, the junction between the roof plates and the rafters).

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EN-10025-2019

API 650 Welded Tanks for Oil Storage

https://www.arab-oil-naturalgas.com/storage-tanks-types/

IDENTIFICATION OF GROUNDWATER POTENTIAL AREA USING REMOTE SENSING AND GIS TECHNIQUE: AN EXAMPLE FOR ESKISEHIR/INÖNÜ PLAIN

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Abstract

With the global warming, the protection and exploration of groundwater resources has increased in importance for both rural and urban areas. Geographic Information Systems (GIS) and Remote Sensing technologies are also actively used in groundwater exploration. The aim of this study is to determine the Groundwater Potential Area of Eskişehir İnönü Plain using Remote Sensing and GIS Techniques. Slope, precipitation, lithology, lineament, drainage density and land cover data were used to evaluate the groundwater potential. SRTM data was used for slope and drainage density, LANDSAT-TM satellite image was used to obtain lineament data, and CORINE data was used for land cover. In addition, station data of the Turkish State Meteorological Service were used for precipitation data, and 1/100 000 geological maps of the General Directorate of Mineral Exploration and Research **(**MTA) were used for lithology. In order to evaluate the effect of the determined factors on the groundwater potential, a literature search was conducted, and relative weight percentages were assigned to each factor. Using the Weighted Overlay tool on the numerically created layers in ArcGIS software, they were overlapped according to the weight percentages determined and the result map was obtained. The resulting map is divided into 5 classes: very low zone, low zone, moderate zone, good zone, and fairly good zone. According to the obtained results, it was determined that the groundwater potential may be high in the NE and SE parts of the İnönü plain.

Keywords: Geographic Information Systems (GIS), Remote Sensing, İnönü Plain

GAIT ASYMMETRIES IN ADOLESCENT IDIOPATHIC SCOLIOSIS (Pilot Study)

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Abstract

This study aimed to assess changes in spatiotemporal gait parameters due to adolescent idiopathic scoliosis and the correlation among gait asymmetry, the feelings or intuitions (kinesiophobia) about what is happening with your body and quality of life in AIS patients compared with their age-matched peers. 40 individuals 20 out of them AIS and the other 20 age-matched control group were evaluated in Kirşehir, Turkey. Each subject in this study, barefoot, naturally walked almost a certain distance on Biodex Unweighing system at a comfortable pace. described their perception of spine deformity by using (WRVAS), (TAPS) for assessing self-perception of trunk deformity, (SRS-22) for assessing quality of life and psychological well-being, and (TSK) to assess their feelings or intuitions about what is happening with their body. Our results showed a significant difference in average step cycle, coefficient of variation for both lower limbs, and ambulation index results between the AIS group and age-matched peers. Our study showed the asymmetry of rotation of segments in the frontal and transverse planes was present in AIS patients compared with the control group. Furthermore, the absence of side-to-side asymmetry for the measurements, except for an asymmetrical torsion distant from the line of progression by a wide base of support. It was found that asymmetrical gait does not increase as the quality of life increases in AIS. This means that changes are shown in these parameters and asymmetrical gait in AIS individuals with the greater changes occurring in the self-image and satisfaction with management domains, and hence QOL is affected. In this sense, it has been concluded that high QOL may be a factor that positively enhances the asymmetrical gait in AIS. It was found that there was a negative significant correlation between TSK with walking speed and balance. The fear of movement increases with walking speed, whereas reduction of balance occurs more frequently in patients with severe scoliosis, so asymmetrical gait does not increase as the feelings or intuitions about what is happening with their body increase in AIS.

Keywords: Adolescent idiopathic scoliosis, Gait parameters, Gait asymmetry, SRS-22, TSK.

Adolescent idiopathic scoliosis (AIS) is a progressive growth condition characterized by a three-dimensional deformation of the spine with lateral curvature and rotation of the vertebral bodies (1). It is the most prevalent form of pediatric scoliosis and the most common type of orthopedic disorder (2). People between the ages of 10 and 16 are most often affected during the growth spurt just before puberty. The incidence of AIS is estimated to be between 1% and 3% of the population (3).

AIS has been shown in several studies to alter the connective structure of the spine, resulting in changes in mobility and balance. Gait patterns differed between patients with AIS and their healthy peers. Previous studies varied in terms of the goal, as Kramers de, Prince F, and Haber CK (4,5,6) showed no asymmetry in GRF data for scoliosis patients, while other studies as Yang et al.(7) study indicated that patients with AIS had asymmetrical GRF gait in the mediolateral direction versus healthy controls. These contradictory results in most of the previous studies that were conducted might be due to variable differences in assessing asymmetries, which requires more studies to determine the origin and consequences of these results. The existing data on AIS is minimal, and the majority of the data comes from a limited body of research.

As a result, asymmetrical gait analysis could aid in the understanding of the pathogenesis of AIS by examining the relationship between gait parameters and gait asymmetry, the feelings or intuitions about what is happening with your body and quality of life in AIS patients so as to minimize abnormal gait, thus improving quality of life. Hence, this study aims to explain the origin and consequences of these results by using the confounding effect of the gait variables on the gait asymmetry.

Individuals and methods

40 individuals aged 10-18 years were evaluated after getting the agreement of the patient's carers. and applied Turkey. The study was conducted between September 2021 and December 2021. The study was approved by the Ethics Committee. The study was conducted in accordance with the principles of the Declaration of Helsinki. 20 AIS patients in our study and 20 age-matched peers without idiopathic scoliosis, exercise therapy contraindicated, previous surgical intervention for scoliosis, and individuals with other disorders were excluded from the study.

At the beginning, the demographic data of the subjects (age, gender, height, weight, and dominant side) were evaluated face-to-face. We utilize a scoliometer to assess Cobb angle. Furthermore, (SRS-22) for assessing QOL, and (TSK) to assess their feelings or intuitions about what is happening with their body. Last, Gait assessment with Biodex Unweighting system for calculating gait parameters and motion analysis. With these differences of variables, we could measure asymmetry ratio of gait parameters. Each subject in this study barefoot naturally walked almost a certain distance at a comfortable pace.

SPSS v.25.0 (SPSS Inc., Chicago, IL, USA) package program was used for statistical analysis. Normal distribution was evaluated by Kolmogrov-Smirnov and Shapiro-Wilk tests. The groups were compared with the Independent t test, and the $p<0.05$ value was considered statistically significant.

Results

40 volunteers (20 with AIS and 20 healthy) participated in the pilot study. The average ages and ranges of the participants are given in Table 1.

Table 1. Demographic information of the participants

	AIS	CONTROL	TOLAL
n (%)	20 (50%)	20 (50%)	40 (100%)
Age	11-18	14-18	11-18
Mean Age ± ss	15.65 ± 2.03	16.00 ± 1.12	

ss: standard deviation

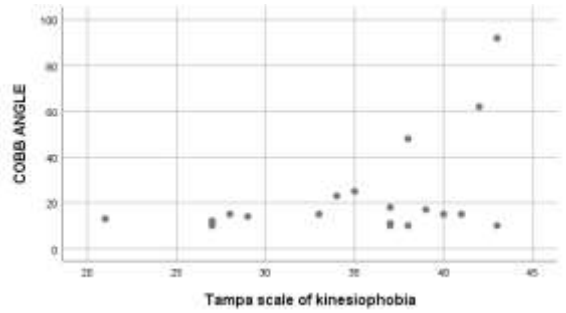
There was a statistically significant positive difference between SG and CG in average step cycle, and ambulation index result, ($p < 0.05$). While there was a statistically significant negative correlation in the average walking speed, and time on each foot (right and left). Between two groups ($p > 0.05$). Table 2.

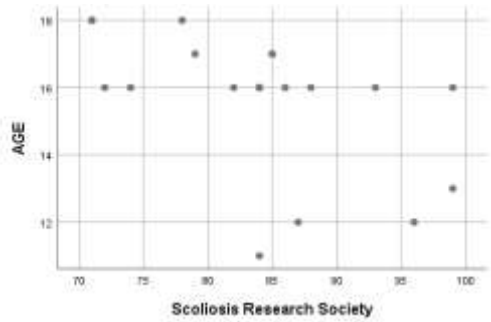
Table 2. The differences of variations.

	AIS	CONTROL	p
AVERAGE WALKING SPEED	.787 ± .127	.84 ± .079	.094
AVERAGE STEP CYCLE	.35 ± .223	.54 ± .162	.003
TIME ON EACH FOOT- RIGHT	61.35 ± 12.35	56.35 ± 11.52	.193
TIME ON EACH FOOT-LEFT	38.65 ± 12.35	43.65 ± 11.52	.193
AMBULATION INDEX RESULT	49.05 ± 21.85	62.70 ± 17.56	.036

There was a significant correlation between the severity of scoliosis and fear of movements, furthermore, a significant and strong correlation was found between the QOL included in our study and the ages of the individuals ($p < 0.05$). Chart: 3,4

Chart 3,4: the correlations of variations.





DISCUSSION

This study aimed to assess changes in spatiotemporal gait parameters due to AIS compared with their age-matched peers. Our research shows that there is a difference in the average step cycle. This

reduction in comparison between the two groups may be due to increased time in the double stance, posture lowers momentum and as a result, the time it takes for the swing leg to progress. Increased double stance may be required when the balance is affected. In general, there is a clear difference in ambulation index results in AIS when compared with the control group. On the other hand, in our study, there was no difference between the right and left sides in terms of walking speed, or time on each foot, and that is consistent with results found by Yank et al. (7). In contrast to this, Haber et al. (6), Park et al. (8) reported a decreased average gait speed. While the period of the stance phase decrease, and they reduce even further with severe scoliosis by Mahaudens et al. (9). Asymmetry in trunk movement is one explanation for scoliosis patients' lower walking speed, according to Kramers-de Quervain et al. (4). Other research concluded that this decrease was due to AIS patients' impaired balance control, Filipovic et al. (10). These inconsistent results might be owing to the degree of the participants' spinal deformities varying between researches. Physical controls, such as the presence of an unequal ability of the lumbar spine and trunk to rotate throughout ambulation, may also impact the entire gait. Asymmetry of trunk rotation in the transverse plane, smaller trunk ROM due to muscle stiffness, all contribute to AIS patients' problems with dynamic balance control. All of these symptoms can result in an unsteady gait.

Also, our results showed the absence of side-to-side asymmetry except for an asymmetrical torsion distant from the line of progression by a wide base of support, despite limited frontal and sagittal plane ROM of the pelvis, hip, and shoulder, and sagittal plane ROM of the knee. Also, these parameters in our study showing the asymmetry of rotation of segments in the frontal and transverse planes were present in AIS patients compared with the control group. This asymmetrical gait is frequently caused by a loss of coordination stability across the scoliosis group. Subjects with AIS may walk asymmetrically due to abnormalities in global postural control methods brought on by spinal deformity. This motion actually comes through the back, and because of greater stiffness of the spinal muscles and even of overuse, that's actually over stretching some of the hip muscles. According to Kramers-de Quavain et al. (4), this is consistent with our results. Also Mahaudens et al. (9) reported no side to-side asymmetry.

The fear of movement in AIS patients may impact gait parameters, leading to an asymmetrical gait with pace. On the other hand, we found that the severity of scoliosis increase the fear of movements, which hence limits physical functions. Therefore, it affects gait parameters and leads to asymmetrical gait in such individuals. Also, we found that the TSK has shown there is no correlation with QOL. Figueras et al. (11), in AIS, there was no relationship found between the TSK and SRS-22. Furthermore, we think that aging in AIS may cause QOL problems due to the relationship between QOL and age, which we found in our study. In other words, we think that it would be crucial to know the relationship between gait asymmetries, gait parameters, TSK, and QOL in AIS patients, which play an important role in ambulatory and functional activities, in order to increase their QOL and with it, possible physical limitations and chronic diseases that affect their ambulatory abilities. Regarding this, few studies have reported a correlation between asymmetrical gait, TSK and QOL, and it is therefore obvious that this needs to be more clarified.

In conclusion, our study showed asymmetrical rotation of segments in the frontal and transverse planes in AIS compared with the control group. Absence of side-to-side asymmetry, except for an asymmetrical torsion distant from the line of progression by a wide base of support. There is a difference in step cycle, and ambulation index results between the AIS group and age-matched peers.

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ELASTIC ANALYSIS OF FUNCTIONALLY GRADED CYLINDERS SUBJECTED TO MECHANICAL LOADING.

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Abstract

In this paper, the analysis of a cylinder made of functionally graded materials exposed to pressure using a sector in-plane finite element based on the strain approach is presented. The material properties are assumed to vary non-linearly in the radial direction while the Poisson's ratio is assumed constant. This sector element is defined in the polar coordinate system and has three degrees of freedom in each node. The results for stresses and displacements of this element agree well with existing results. The effect of grading parameter is also discussed.

Keywords: functionally graded materials- pressure- sector in-plane finite element- strain approach- polar coordinate.

INTRODUCTION

Djoudi and Bahai (2004), Rebiai and Belounar (2013), Belounar and Guerraiche (2014) developed robust elements based on the strain approach for the analysis of many engineering problems. In the case of circular boundaries, it is appropriate to use the sector element in the polar coordinate system, some sector elements are developed using the strain based approach for general plane elasticity problems by Belarbi and Charif(1998), Bouzrira et al.(2005), Abderrahmani et al.(2017). These elements are applied only for the analysis of cylinders under uniform pressure.
Bouzriba and Bouzrira (2015) are developed a new sector element in polar coordinate for the analysis of cylinders exposed to pressure and temperature loading, in which the analysis of the cylinder under temperature has never been tested before using this approach.
Functionally graded materials (FGMs) are new advanced heat resistant materials that are used in aerospace, nuclear power, gas turbine engine, and civil engineering. Extensive studies are presented by Tutuncu (2007), Li and Peng (2009), Nie and Batra (2010), Xiang et al. (2011) to determine the stress and displacement distributions in functionally graded cylinders subjected to mechanical loads.
In the present study, the sector element developed by Bouzriba and Bouzrira (2015) is used for analysis of functionally graded cylinders exposed to pressure in order to prove the accuracy and robustness of this element.

HOLLOW FG CYLINDERS UNDER PRESSURE

A hollow FG cylinder is exposed to the internal and external pressure as shown in Figure 1. The solution of radial stress σ_r and hoop stress σ_θ is given by Horgan and Chan (1999).

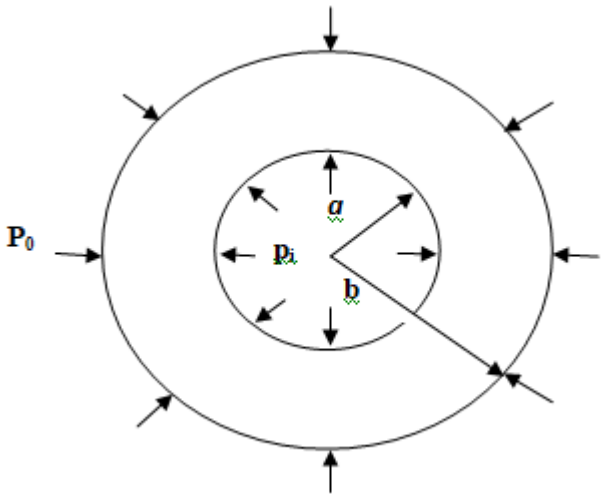

Figure1. The cross-section of the FG cylinder.

The Young's modulus varies with the radial coordinate as follows:

$$E(r) = E_0\left(\frac{r}{a}\right)^m \tag{1}$$

Internal pressure case

$$\sigma_r = \frac{p_i a^{(2+w-m)/2}}{b^w - a^w}\left[r^{(-2+w+m)/2} - b^w r^{(-2-w+m)/2}\right] \tag{2}$$

$$\sigma_\theta = \frac{p_i a^{(2+w-m)/2}}{b^w - a^w}\left[\frac{2+w\upsilon-m\upsilon}{w-m+2\upsilon} r^{(-2+w+m)/2} + \frac{2-w\upsilon-m\upsilon}{w+m-2\upsilon} b^w r^{(-2-w+m)/2}\right] \tag{3}$$

External pressure case

$$\sigma_r = \frac{-p_0 b^{(2+w-m)/2}}{b^w - a^w}\left[r^{(-2+w+m)/2} - a^w r^{(-2-w+m)/2}\right] \tag{4}$$

$$\sigma_\theta = \frac{-p_0 b^{(2+w-m)/2}}{b^w - a^w}\left[\frac{2+w\upsilon-m\upsilon}{w-m+2\upsilon} r^{(-2+w+m)/2} + \frac{2-w\upsilon-m\upsilon}{w+m-2\upsilon} a^w r^{(-2-w+m)/2}\right] \tag{5}$$

Where $w = \left(m^2 - 4m\upsilon + 1\right)^{1/2}$

SECTOR IN-PLANE FINITE ELEMENT

In This study, the sector in-plane finite element developed by Bouzriba and Bouzrira (2015) is used, this element has three degrees of freedom in each node: u, v and Φ.
With u, v, ϕ are the displacement in the r direction, the displacement in the θ direction and the in-plane drilling rotation respectively.

$$u = \cos\theta\, a_1 + \sin\theta\, a_2 + r a_4 + (1+r^2)a_6 + (1+\theta r)a_{10} + r^3 a_{11} \tag{6}$$

$$\phi = a_3 - \theta a_4 + \theta a_5 - \frac{\theta}{2r} a_6 + \left(\frac{1}{2} + \log(r)\right) a_7 - \frac{5r^3\theta^2}{12} a_8 + \frac{\theta^2}{2} a_9 - \left(1 + \frac{\theta^2}{2} + \frac{\theta}{2r} + \log(r)\right) a_{10} \quad v = -\sin\theta\, a_1 + \cos\theta\, a_2 +$$

$$-3r a_{12} \quad -r\log(r)(a_{10} - a_7) - 2r^2 a$$

(7)

(8)

The stiffness matrix $[K^e]$ can be calculated by:

$$[K^e] = [C^{-1}]^T \left[\int_{-\beta r1}^{+\beta r2} \int r [B]^T [D][B] dr d\theta \right] [C^{-1}] \qquad (9)$$

Where $[C]$ is the transformation matrix given by:

$$[C] = \begin{bmatrix} \cos\theta & \sin\theta & 0 & r & 0 & 1+r^2 & 0 & 0 & 0 & 1+\theta r & r^3 & 0 \\ -\sin\theta & \cos\theta & r & -r\theta & r\theta & -\theta & r\log(r) & -\frac{r^4\theta^2}{6} & \frac{r\theta^2}{2} & -\frac{r\theta^2}{2} - \theta - r\log(r) & 0 & -2r^2 \\ 0 & 0 & 1 & -\theta & \theta & -\frac{\theta}{2r} & \frac{1}{2} + \log(r) & \frac{-5r^3\theta^2}{12} & \frac{\theta^2}{2} & -\left(1 + \frac{\theta^2}{2} + \frac{\theta}{2r} + \log(r)\right) & 0 & -3r \end{bmatrix}$$

(10)

Where r_i and θ_i are the coordinates of node i (i=1, 4), the matrix [C] is given by:

$$[C] = [[C_1][C_2][C_3][C_4]]^T \qquad (11)$$

The strain matrix $[B]$ is defined as:

$$[B] = \begin{bmatrix} 0 & 0 & 0 & 1 & 0 & 2r & 0 & 0 & 0 & \theta & 3r^2 & 0 \\ 0 & 0 & 0 & 0 & 1 & r & 0 & -\frac{\theta r^3}{3} & \theta & 0 & r^2 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\theta}{r} & 1 & -\frac{\theta^2 r^3}{2} & 0 & \frac{\theta}{r} & 0 & -2r \end{bmatrix} \qquad (12)$$

In the case of plane strain problems the elasticity matrix $[D]$ is given by:

$$[D] = \frac{E}{(1+\nu)(1-2\nu)} \begin{bmatrix} 1-\nu & \nu & 0 \\ \nu & 1-\nu & 0 \\ 0 & 0 & \frac{1-2\nu}{2} \end{bmatrix} \qquad (13)$$

RESULTS

Considering a FG hollow cylinder subjected to internal and external pressures. The properties of the inner surface are E_o=1GPa, $\upsilon = 0.28, a = 5mm, b = 10mm$.
Figures 2 to 5, show the variation of the normal stresses through the thickness of the cylinder for m=0, 1, and 2.

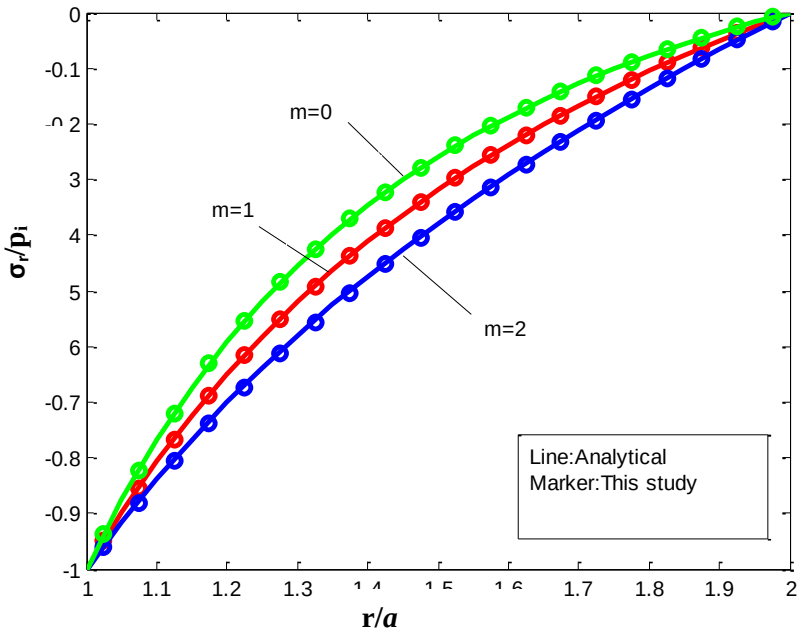

Figure2. Normalized radial stress distributions in FG cylinder under internal pressure.

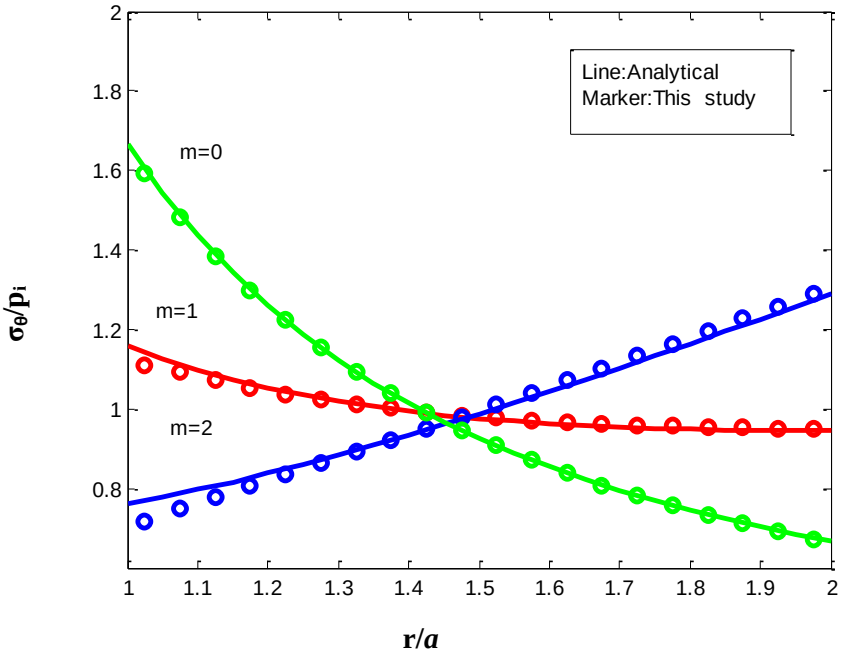

Figure 3. Normalized hoop stress distributions in FG cylinder under internal pressure.

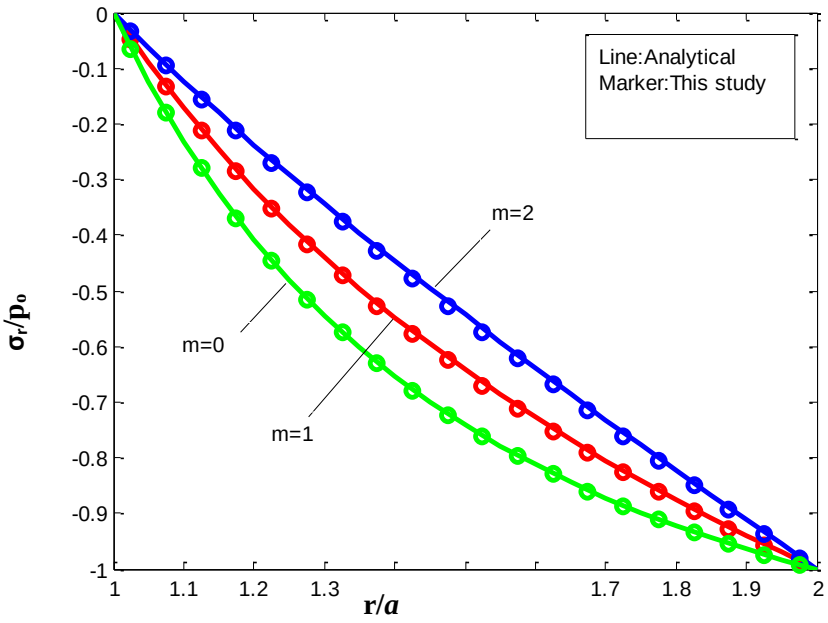

Figure 4. Normalized radial stress distributions in FG cylinder under external pressure.

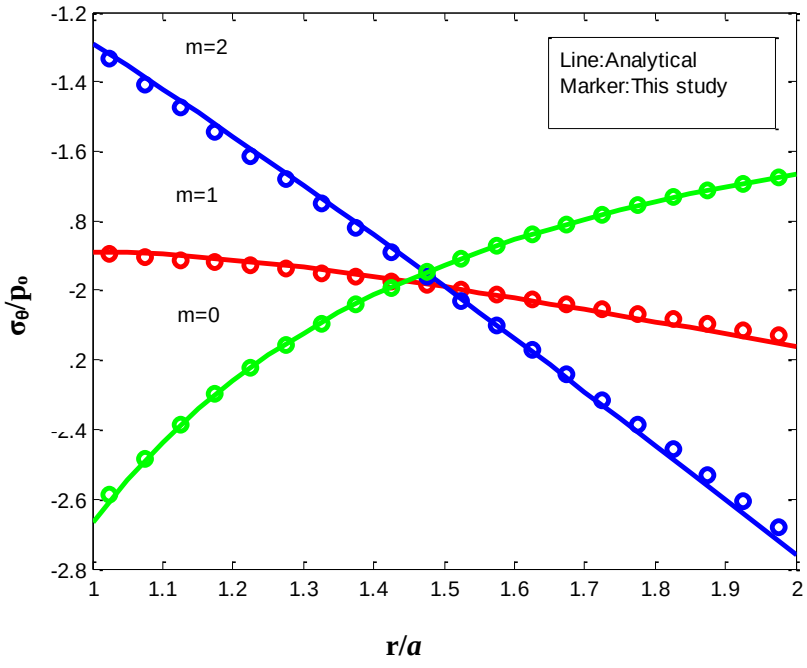

Figure 5. Normalized hoop stress distributions in FG cylinder under external pressure.

DISCUSSION

From these figures it can be seen that:

1. The results obtained in this study by the present sector element agree closely with analytical solutions.
2. For the case of internal pressure, with increasing value of m, the compressive radial stress increases and the hoop stress deceases along the radius for m=0,1and increase at m=2
3. For the case of external pressure, with increasing value of m, the compressive radial stress decreases and the hoop stress decrease along the radius at m=1, 2 and increase at m=0.

CONCLUSION

In this paper, a sector in-plane finite element in polar coordinates based on the strain approach is applied for the elastic analysis of FG cylinders subjected to mechanical loading. Numerical results for stresses obtained by this element compared with analytical solutions available in the literature show its performance in the analysis of this type of problems.

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SYNTHESIS AND ANTICORROSIVE PROPERTIES OF A NEW EPOXY POLYMER FOR CARBON STEEL E24 IN HCL 1 M.

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Abstract

The present work consists in the study of corrosion inhibition of E24 carbon steel in 1M hydrochloric acid in the presence of different concentrations from 10^{-3} to 10^{-6}M of the difunctional epoxy polymer difunctional diglycidyl bis carbon disulfide ether of bisphenol A. The results obtained by gravimetric and electrochemical methods (stationary and transient) show that the tested polymer is a very effective corrosion inhibitor. Indeed, the inhibitory efficiency increases with the increase of the epoxy polymer concentration and reaches a maximum value of 91%, 98% and 96% at 10^{-3} M for WL, PDP and EIS measurements respectively. The adsorption of polymer obey the Langmuir isotherm. Therefore, the polymer act with surface of steel by physisorption interaction. This polymer presents characteristics that facilitate their adsorption on the surface of the metal substrate, notably the existence of aromatic rings and heteroatoms (O and S).

Keywords: Inhibition, carbon steel, hydrochloric acid, polymer, gravimetric, electrochemistry.

ULTRASOUND IMAGING IN DENTISTRY, WHAT'S NEW?

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Abstract

Ultrasonography is a non-invasive, radiation-free, method of diagnosing periapical lesions while radiologic methods are more common. Periapical lesions due to endodontic infection are one of the most common causes of periapical radiolucency that need to be distinguished to help determine the course of treatment, this can be decisive for a correct differential diagnosis and for the prognosis of the tooth. This review aimed to examine the accuracy of ultrasound and compare it to radiographs in distinguishing these lesions in vivo.

This review process followed the PRISMA guidelines. A literature search of databases (PubMed, Scopus, Embase, and Web of Science) was conducted without any restrictions on time. Articles available in English were included. The selection was done according to the inclusion and exclusion criteria. The QUADAS-2 tool was used to assess the quality of the studies.

The search provided a total of 87 articles, out of which, five were selected for the final review. In all the studies, ultrasound had higher accuracy in distinguishing periapical lesions. All the studies indicated a risk of bias, especially in patient selection.

Within limitations, the study indicates that ultrasound is a better diagnostic tool to distinguish periapical lesions compared to radiographs but further studies with well-designed, rigorous protocols and low risk of bias are needed to provide stronger evidence.

Keywords: imaging; ultrasound; radiograph; periapical; lesions; diagnosis.

EFFECT OF SOLAR THERMAL RADIATION AND MAGNETIC FIELD ON THE FLOW OF CASSON FLUID

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Abstract

In this paper, the behavior of the non-Newtonian fluid and heat transfer is considered in an exponentially stretching surface in the occurrence of porous magnetic field, as it has vast applications in the field of several industries. An explicit Finite difference method is applied for the solution of governing equations. By considering governing equations of the mathematical model as a platform non-linier differential equation have been reduced to ordinary differential equations by using similarity transformations. BVP4C software technique is used for finding the solutions and results are presented in the form of tables and graphs for several equations. After simulation, it is found that the heat transfer rate decreases with higher values of the magnetic field as well as the radiation. The temperature profile and velocity profile of the Casson fluid flow is directly related to several parameters. Finally, it is observed that several parameters such as Casson fluid parameter, radiation parameter, Prandtl number, and Eckert number are stable at the point of convergence.

Keywords: Solar Thermal radiation, Magnetic field, Casson parameter, viscous dissipation

Introduction

Now a day many industries and medicals are utilized the behavior of non-Newtonian fluid. The unsteady and turbulent flow has been characterized by non-Newtonian fluids. In non-Newtonian fluids, viscosity changes to liquid or more solid. A non-Newtonian fluid has diversified applications such as soap solutions, cosmetics, toothpaste and ketchup etc. Non-Newtonian fluid basically defined as a shear thinning fluid. Now a day's researchers have keen interest in MHD flows of a non-Newtonian fluid as it briefly used in the field of engineering. Gupta and gupta [1] presented the different types of fluids and find the solution for boundary layer problems. Magyari and Keller [2] investigates the characteristics of both mass and heat transfer, also obtained the power law using boundary conditions. In non-Newtonian fluids, viscosity changes to liquid or more solid. Farhad et al. [3] discussed the different types of second grade fluid flow, finally obtained graphically the values of different parameters on it. Khan et al. [4] investigated various solutions for Newtonian fluids and calculated the results for velocity and temperature. It also used in medicals and plasma therapy. Khan and pop [5] investigated the numeric solution of the Nano fluid that stretching over a flat surface. Thermal radiation is one type of radiation that moves in all directions. Sheikholeslami et al. [6] discussed various type of Nano particle and their shape. Sajid and

Hayat [7] investigated how the temperature effects on the prandtl and radiation number. Pal [8] observed the similar solutions for magnetic field as well as heat generation. Ishak [9] illustrated the effect of the radiation on electromagnetically boundary layer flow over an exponentially stretching sheet. Bidin and Nazar [10] investigated the effects of radiation on the boundary layer flow over an exponentially stretching sheet. Salahuddin et al. [11] observed the numerical solutions using bvp4c method of various distributions relating to the basic physical parameters. The solar thermal radiations have an important application in space and industrial sector. In this radiation mostly, the transformation of fluid such as water and oil occur. The radiations are used in aviation industries due to heat transfer and it also applicable for managing the heat transfer rate and polymer processing. The solar thermal radiation has used its variation application in power plants. Many researchers presently working to find out the magnetic effect and solar thermal radiation on the heat transform flow. Basically, this radiation are used in the nuclear weapons, space heating, air conditioning, and electrical power. This radiation has a vast application region in industry as well as in commercial sector. Most of the industries use coolant in different machineries to decline the thermal radiation. This radiation recently used for the development of furnaces, construction works, power plants and solar system etc. Mahanta et al. [12] discussed the MHD 3D Casson fluid flow using the convective boundary layer problem in a stretching surface. Nadeem et al.[13]analyzed for MHD three dimensional using convective boundary condition to find out the Casson Nano fluid .Shaw et al.[14] illustrated the effect of heat and mass transfer on the unsteady MHD Casson fluid which chemically reactive in a porous platform upon a stretching sheet .Zhu et al.[15] analyzed heat transfer with the help of radiation and MHD flow. Sanjaya and khan [16] carried out the boundary layer fluid flow and effect of various parameters in the effect of thermal radiation and magnetic field on the flow of Casson fluid stretching surface. Sandeep et al. [17] revealed how the MHD flow and the transfer o f heat energy in the Nano fluid over an exponentially stretching sheet. Imtiaz and Alsaedi [18] examined about the magneto Nano fluids and the effect of dissipation over a exponentially stretching sheet. Anwar et al.[19] studied simultaneous impact of not only heat and but also mass transfer of various types of Nano fluids in a non-liner stretching sheet. Qureshi et al. [20] analysed the thermal conductivity and find out the characteristics of various thermal conductivity with the thermal diffusivity upon both transfer of heat and mass. Fang et al. [21] investigated the power law with variable thickness incorporated in the boundary layer flow. Stretching sheet occurs when the velocity at boundary has a distance from a fixed point. Prasad et al.[22] discussed the MHD flow of visco elastic fluid and effect of viscosity in non-Newtonian Fluid. Rushi kumar [23] illustrated the MHD boundary layer flow in the transfer of heat and mass, concluded the slip effect on it.

Dissipation is one type of process used to convert mechanical energy into thermal energy of the downward flow of water. The application of dissipation mainly illustrate the viscosity of the dilute form of a substance. The concept of viscous dissipation has a wide range of application in polymer processing as well as in aerodynamics. This paper analyzed the effect of thermal radiation as well as viscous dissipation in the Casson fluid flow over the exponential porous stretching surface. Khalid et al.[24] investigated the numerical solution of different types of nano fluid and compared the isothermal solution graphically. Cortell[25] discussed the numerical solution of ambient fluid and its effect on the thermal radiation. Sharma et al.[26] investigated the soret and duffor effect, concluded the numerical solution for incompressible fluid in a vertical cone.Bestman[27] presented the activation energy by considering porous medium as a suitable platform to analyses the flow of convective boundary layer. Ferdows et al.[28] investigated the numerical method of boundary layer flow of different types of Nano fluid with viscous dissipation. Maleque[29] studied Kamran and

akmal[30] the conjugate effect of binary chemical reaction and activation energy on the boundary layer flow using viscous dissipation. Qing et al.[31]investigated conjugate methods such as successive linearization method SLM and chebyshev spectral collocation to find out the MHD flow in a Casson fluid .Pramanik [32] investigated the effect of thermal radiation in the Casson fluid flow over exponentially stretching sheet. The main objective of the current study is to develop the mathematical modeling of the Casson fluid flow with the effect of thermal radiation and magnetic field on it. Here also discuss the parameters of the Casson fluid model using different graphs. The results also discussed thoroughly, it is found that the effect of radiation on the Casson fluid has a huge application to find out the governing equations.

Problem Identification

The electrically conducting Casson fluid flow is considered along with an exponentially stretching sheet in the presence of the porous medium. Let us take the velocity u along the x-axis as well as velocity v along the y-axis in the porous stretching surface. The coincide point of the stretching sheet and flow direction is $y = 0$ and $y > 0$. A uniform magnetic field of strength ($B0$) is applied normally to the flflow direction. The induced magnetic field is ignored due to the small magnetic Reynolds number.

Under the assumptions a rheological equation is characterized as follows;

$$\tau_{ij} = \begin{cases} 2\left(\mu_B + \frac{\tau_y}{\sqrt{2\pi}}\right) e_{ij}, & \pi > \pi_c, \\ 2\left(\mu_B + \frac{\tau_y}{\sqrt{2\pi_c}}\right) e_{ij}, & \pi < \pi_{c.} \end{cases} \quad (1)$$

We consider that τ_{ij} – the stress tensor at $(i,j)th$ component, μ_B – the plastic dynamic viscosity of the non-Newtonian fluid, τ_y – yield stress of the fluid, $\pi = e_{ij}e_{ij}$ is the product of deformation rate itself and e_{ij} –the component deformation rate at $(i,j)th$ place, π_c –the critical value of the non-Newtonian fluid.

Basically, when shear stress is less than yield stress in the given fluid, it behaves like a solid but when reverse effect are found in fluid, then it starts to moves as:

The governing equations of continuity, momentum, and energy are given below

$$\frac{\partial u}{\partial x} + \frac{\partial v}{\partial x} = 0 \quad (2)$$

$$u\frac{\partial u}{\partial x} + v\frac{\partial u}{\partial y} = \mu\left(1 + \frac{1}{\beta}\right)\frac{\partial^2 u}{\partial y^2} - \frac{\sigma {B^2}_0}{\rho}(u) \quad (3)$$

$$u\frac{\partial T}{\partial x} + v\frac{\partial T}{\partial y} = \frac{k}{\rho c_p}\frac{\partial^2 T}{\partial y^2} + \frac{16\sigma T_\infty^{\,3}}{3\rho c_p k^*}\frac{\partial^2 T}{\partial y^2} + \mu\left(1 + \frac{1}{\beta}\right)\left(\frac{\partial u}{\partial y}\right)^2 \quad (4)$$

The corresponding boundary conditions have been considered Newtonian heating in both heat and mass transfer along with partial slip at the surface.

$$\left.\begin{array}{l} u = U_0, v = -V_0, -k\dfrac{\partial T}{\partial y} = h_f\left(T - T_\infty\right) \ \ at\ y = 0 \\ u \to 0, T \to T_\infty \ \ as \ \ \ y \to \infty \end{array}\right\} \tag{5}$$

$U = U_0 e^{\frac{x}{L}}$ denoted the velocity [Magyari and Keller [2]].

$V(x) = V_0 e^{\frac{x}{2L}}$ a special type of velocity at the wall and V_0 as the constant. It has also defined as

$V(x) < 0$ and $V(x) > 0$ are conjugate velocity of suction as well as blowing.

$T_w = T_\infty + T_0 e^{\frac{2x}{L}}$ Denoted as the temperature, U_0, T_0 are the reference velocity, B is the magnetic induction parameter, k is the thermal conductivity, c_p referred as the specific heat of the fluid flow.

Let us choose a suitable similarity transformation as follows

$$\eta = \sqrt{\frac{U_0{}^2}{2vL}} e^{\frac{x}{2L}} y^{'}, u = U_0 e^{\frac{x}{L}} g'(\eta)$$

$$v = -\sqrt{\frac{vU_0{}^2}{2vL}} e^{\frac{x}{2L}} \left(g(\eta) + \eta g'(\eta)\right),$$

$$T = T_\infty + T_0 e^{\frac{x}{2L}} \theta(\eta)$$

By applying the above similarity transformation Equation (3),(4) and boundary conditions are reduced. Now the reduced ODE's form of the Equation as follows,

$$g''' + gg'' - 2g'^2 - Mg' = 0 \tag{6}$$

$$\left(1 + \frac{4}{3}N\right)\theta'' + P_r(g\theta' - g'\theta) + P_r E_c\left(1 + \frac{1}{\beta}\right)g''^2 = 0 \tag{7}$$

Subject to boundary conditions are as follow.

$$\begin{array}{l} f(0) = S,\ f'(0) = 1, \theta'(0) = -Bi(1 - \theta(0)) \\ f'(\infty) \to 1, \theta'(\infty) \to 0 \end{array} \tag{8}$$

where the magnetic parameter, Prandtl number $M = \frac{\sigma B_0{}^2}{\rho a}, , Pr = \frac{v}{\propto}$, respectively.

$Ec = \frac{U_0^{\,2}}{\alpha T_0}\sqrt{\nu/2L}$ and $N = \frac{4T_\infty^{\,3}}{c_p k k^*}$ are Eckert number and radiation parameter respectively.

Finite difference method Analysis

By considering the explicit finite difference method the governing equations of Momentum, Energy obtained. Hence Equation (1), (4), (5) converted

to the following forms as follows;

$$\frac{U'_{i,j} - U'_{I-1,J}}{\Delta x} + \frac{V_{i,j-} V_{I-1,j}}{\Delta y} = 0 \tag{9}$$

$$\left(1+\frac{1}{\beta}\right)\frac{g_{i,j+1} - 3g_{i,j}g_{i,j+1} + 3g_{i+1,j}g_{i,j} + g_{i+1,j}}{(\Delta x)^3} + \frac{g_{i,j+1} - 2g_{i,j} + g_{i,j+1}}{(\Delta y)^2} - 2\frac{g_{i+1,j} - g_{i,j}}{\Delta x} - M\frac{g_{i,j+1} - g_{i,j}}{\Delta y} = 0 \tag{10}$$

$$(1+\frac{4}{3}N)\frac{\theta_{I,J+1} - 2\theta_{I,J} + \theta_{I,J-1}}{(\Delta x)^2} + P_r(\frac{g\theta_{i,j} - \theta'_{i,j}}{\Delta x}) - g'\frac{(\theta_{i,j} - \theta_{i,j})}{\Delta y} + P_r E_c(1+\frac{1}{\beta})\frac{g_{i,j+1} - 2g_{i,j} + g_{i,j-1}}{(\Delta y)^2} = 0 \tag{11}$$

Hence this is the finite difference form of the governing equations. Where N is the radiation parameter, *Pr* is the prandtl number and*Ec* is the Eckert number and β is the Casson flfluid parameter.M is the magnetic parameter.

The boundary conditions are as follows,

$U(i,j) = 1, V(i,j) = 0, \theta'(i,j) = -Bi(1-\theta(i,j))$ at y=0 (12)

$U(i,j) \to 0, \theta(i,j) \to 0. \quad as \quad y \to \infty.$

Stability analysis and convergence criteria of the model

The stability and convergence obtained by using finite difference form. The co-efficient in terms of thermal is symbolized by α and β is the Casson fluid parameter. The Fourier expansion of U, θ and g separated by $e^{i\alpha y}\, e^{i\beta y}$ with a constant, where $i = \sqrt{-1}$ at t=g

$$U : \psi(\eta) e^{i\alpha x} e^{i\beta y}$$

$$\theta : \theta(\eta) e^{i\alpha x} e^{i\beta y}$$

$$g : g(\eta) e^{i\alpha x} e^{i\beta y}$$

Now changed parameter obtained the values

$$U^{'} = \psi^{'}(\eta)e^{i\alpha x}e^{i\beta y}$$

$$\theta^{'} = \theta^{'}(\eta)e^{i\alpha x}e^{i\beta y}$$

$$g^{'} = g^{'}(\eta)e^{i\alpha x}e^{i\beta y}$$

Now substituting in equation (5),(6) and (7) and Momentum and energy equations becomes

$$\frac{\psi(\eta)\left(1-e^{i\beta y}\right)}{(\Delta x)}+\frac{\psi(\eta)\left(e^{i\beta y}-1\right)}{(\Delta y)}=0 \qquad (13)$$

$$\left(1+\frac{4}{3}N\right)\frac{2\theta(\eta)(\cos\beta\Delta y-1)}{(\Delta x)^2}+P_r\frac{\left(g^{'}_{i,j}-\theta_{i,j}\right)}{(\Delta x)}-g^{'}\frac{\left(\theta^{'}_{i,j}-\theta_{i,j}\right)}{(\Delta y)}+P_rE_c\left(1+\frac{1}{\beta}\right)\frac{2\theta(\eta)(\cos\beta\Delta y-1)}{(\Delta y)^2}=0$$

(14)

$$\left(1+\frac{1}{\beta}\right)\frac{g(\eta)e^{(i\beta\Delta y-1)-3g(\eta)(\cos\beta\Delta y-1)+3g(\eta)e^{(i\beta\Delta y-1)+e^{(i\alpha_1\Delta x-1)}}}}{(\Delta x)^3}+\frac{2g(\eta)(\cos\beta\Delta y-1)}{(\Delta y)^2}-2g(\eta)e^{(i\alpha_1\Delta x-1)}\Delta x-M\frac{g(\eta)e^{i\beta y-1}}{\Delta y}=0$$

(15)

Where $U^{'} = A_1U + A_2\theta + A_3g$

$$A_1 = (1+\frac{4}{3}N)\frac{2\theta(\eta)(\cos\beta\Delta y-1)}{(\Delta x)^2}$$

$$A_2 = P_r\frac{g(\theta^{'}{}_{i,j}-\theta_{i,j})}{\Delta x}$$

$$A_3 = \frac{2\theta(\eta)(\cos\beta\Delta y-1)}{(\Delta y)^2}$$

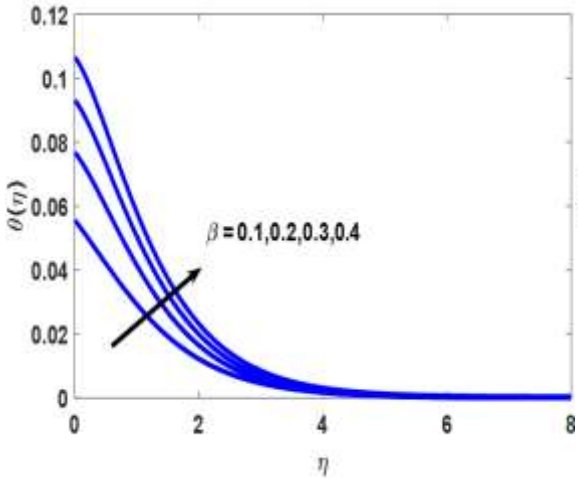
Here the values of A_1, A_2, A_3 is -1. so the stability conditions differs with the primery condition as

$$U = V = T = 0, \Delta\eta = 0.008, \Delta x = 0.5, \Delta y = 0.35\ E_c \geq 0.205\ P_r \geq 0.337.$$

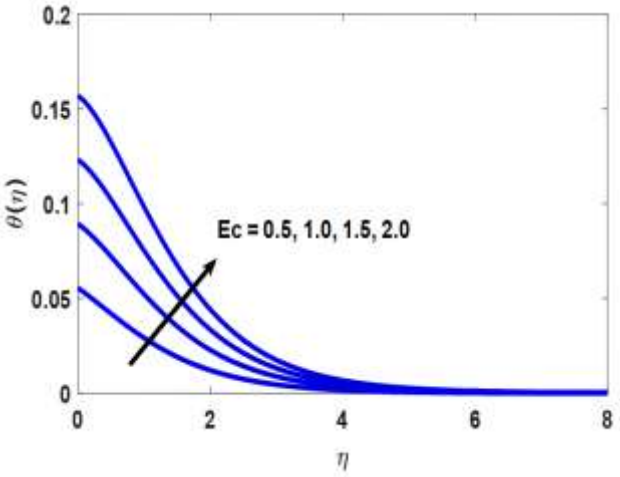
Results and discussions

In the present context, a mathematical model has been constructed by considering PDEs to ODEs by suitable similarity transformations. Different parameters such as Casson fluid parameter (β), Eckert number Ec , and Prandtl number Pr are used to identify the effect of thermal radiation and viscous dissipation. The stability and convergence also have been calculated. It is observed that in the present paper, $Pr \geq 0.337$ and $Ec \geq 0.205$ has symbolized the form

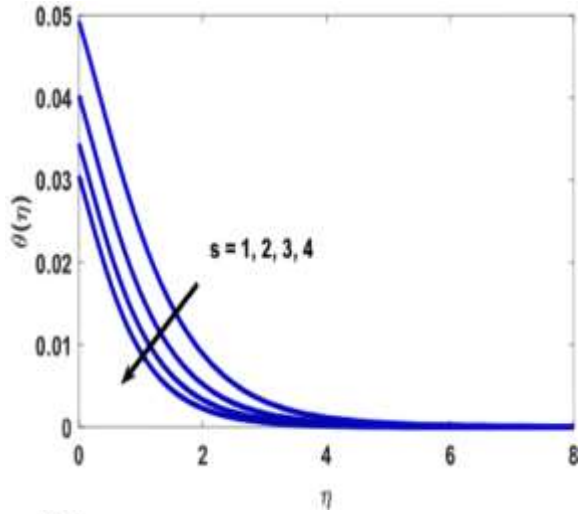
of the coefficient in terms of thermal radiation. In the finite difference method, the effect of thermal radiation and viscous dissipation on heat and mass transfer is characterized in the Casson fluid flow.

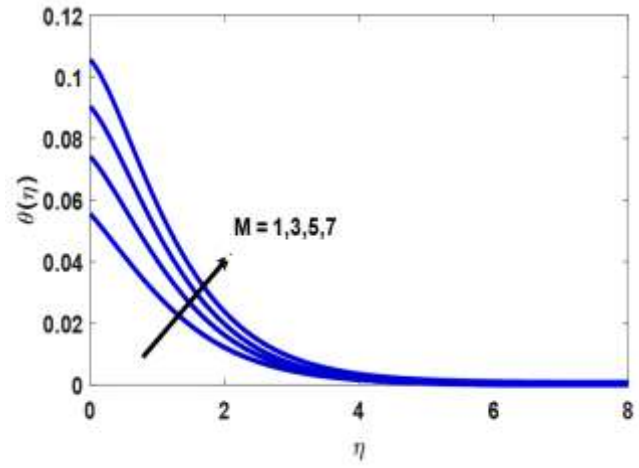


(a) Temperature profile for β.



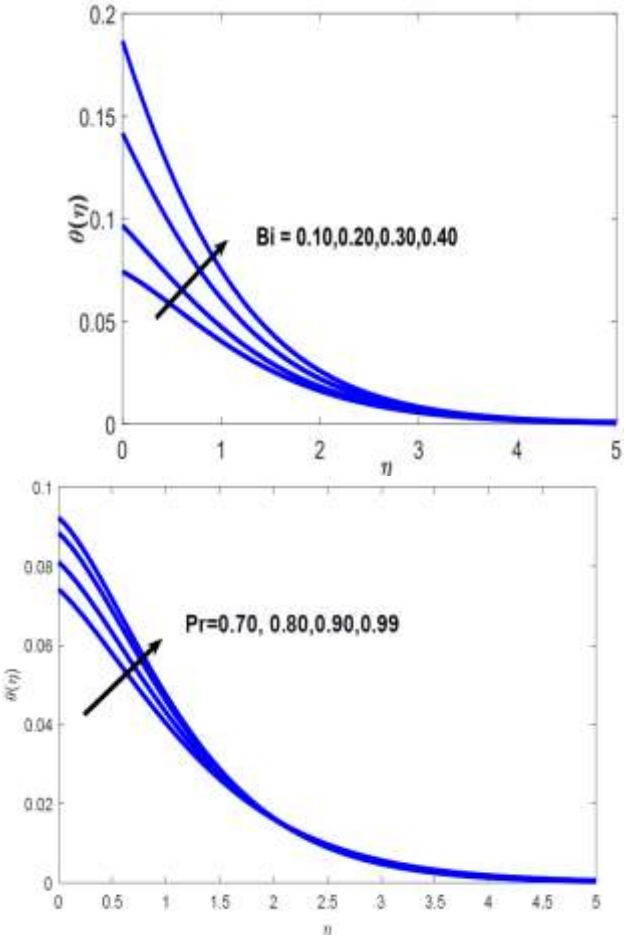
(b)Temperature profile for β.





(c) Temperature profile for S.

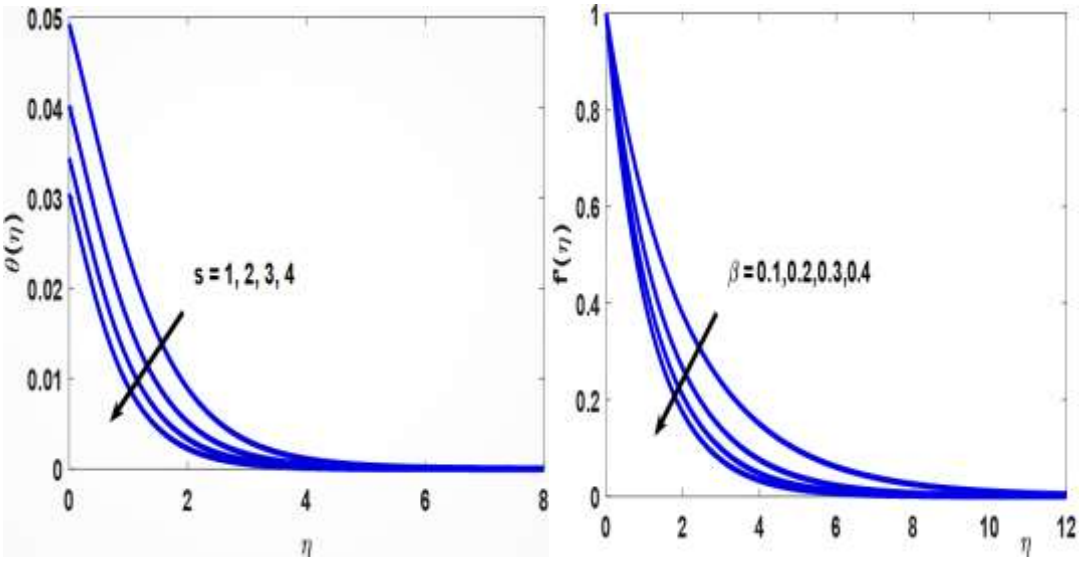
d) Temperature Profiile for M.



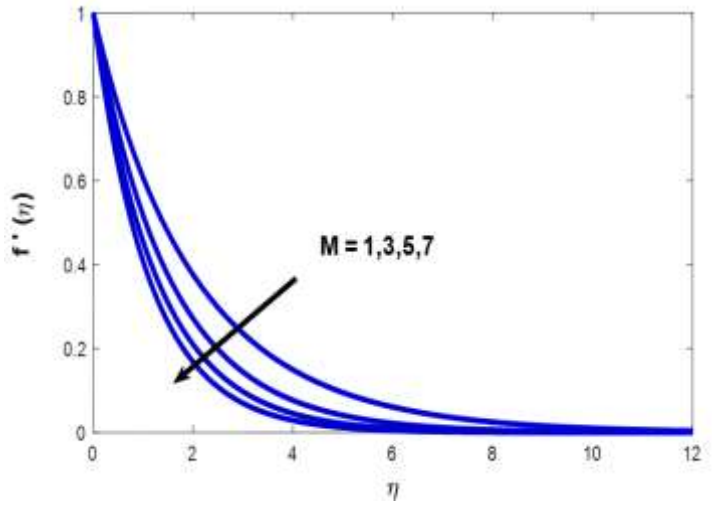
(e) Temperature Profile for *Bi*. (f) Temperature Profile for Pr.

Fig. 1: Effects of temperature in different parameters.

For the analysis of the results a numerical method is used for various parameters such as Casson parameter (β), suction/blowing parameter (S), radiation parameter (N), and Prandtl number (Pr). *Fig.*1(*a*) represents the temperature flow for different values of Casson parameter β and found temperature is enhanced with higher values of of the parameter. *Fig*.1(*b*) illustrate that the Eckert number (*Ec)* increases with the increasing values of the temperature. The Eckert number has a vast application in finding the viscosity of the fluid. Fig. 1(d) represent the temperature flow of the magnetic parameter M due to Lorentz force temperature profiles increases.Fig.1(c) represents the temperature flow for different values of suction parameter S. It is found that the values of magnetic parameter increases with the increase in temperature. After simulation it is found that magnetic field depends on the increasing values of the suction parameter .Finally it is observed that in Fig. 1(*f*) the values of the prandtl number (*Pr*) decreases with the decreasing values of the temperature. Fig. 1(e) shows that the temperature profile increases with increasing values of biot number. This is because the biot number is related to the convective boundary condition on the surface, which enhances the temperature profile for higher values of the parameters.



(a) Velocity Profile for S. (b) Velocity foe β.



(c) Velocity for M.

Fig. 2: Effect of velocity in different parameters.

After simulation, it is found that the velocity is directly proportional to the Casson parameter β. The momentum decreases with increasing values of β. The velocity of fluid decreased due to suction parameters in Fig.2(a). The velocity profiles decreases due to decrease of Casson parameter β as discussed in the Fig. 2(b). Fig 2 represents the effect of suction/blowing parameter S on the velocity in the exponentially stretching sheet. After simulation it is observed that ($S > 0$) means that the velocity field reduced due to increasing in the Casson parameter. In Fig.2(c) represents the velocity flows for magnetic parameter M and found the decrease its velocity profile due to Lorentz force.

Parameters	Skin friction	Heat transfer
β	5.648592	0.025000
	4.237993	0.025000
	3.640180	0.025000
	3.297766	0.025000
S	5.648592	0.025000
	5.905813	0.025000
	7.053375	0.025000
Ec	5.648592	0.025000
	5.648592	0.025000
	5.648592	0.025000
	5.648592	0.025000
M	5.648592	0.022300
	8.810123	0.021000
	10.011986	0.020000
	11.011986	0.025000
Bi	7.408110	0.010000
	7.408110	0.025000
	7.408110	0.035000
	7.408110	0.045000

Table 1: Effect of Skin friction and Nusselt number in several parameters.

In the above table the heat transfer rate remains same for the Suction and Eckert number, while the skin friction increases with suction parameter. The skin friction remains same when the Eckert number remains same as well as the heat transfer also remain same. In case of magnetic parameter, the skin friction coefficient increases with decreasing in heat transfer. The magnetic field remains same while the heat

Transfer increases. Moreover, it is observed that there are several values of parameters which depends upon the variation in skin friction and nusselt number.

β	S	Pramanic results[32]	Present results
0.2	0.5	8.44	8.43
0.5	0.5	6.54	6.44
0.8	0.5	5.63	5.60

Table 2: Comparison table for several values of parameters.

Conclusion

The numerical solutions of the present paper effects of thermal radiation and magnetic field. Casson fluid flow over an exponential stretching sheet have been analyzed. A suitable similarity transformation has been used to convert non-linier partial differential. A software technique BVP4C has been utilized for the solution of the governing equations. In comparison table of pramanik [32] and the present results are matched excellent. The main finding of the present paper are summarized as follows;

1 . With higher values of the Casson fluid parameter, the momentum boundary layer

Decreases but the reverse effects have been observed in the case of thermal bound

Layer thickness.

2 . With an increase in thermal radiation parameter, the temperature profile increases

Due to the effect of thermal diffusivity.

3 From skin friction analysis, it is found that when enhancing the skin friction

results in the case of suction parameter *S*, magnetic parameter *M* and biot number

Bi

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MOLYBDENE OXIDIZED LAYERS COATING OF WE43 MAGNESIUM ALLOY WITH RF SPUTTER METHOD

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Abstract
Mg alloys are preferred in automotive, aircraft, aerospace and communication industries due to their low specific gravity, high strength relative to their weight, high dimensional stability, electromagnetic shielding and impact characteristics. WE series Mg alloys, containing, Mg, Y, Nd, rare earths, are preferred in main transmission and housing parts in aerospace applications due to their high creep strength and good wear resistance compared to other Mg alloys. Besides all the advantages of Mg and its alloys, the most important factor limiting the usage area is its low corrosion and wear resistance. The aim of the planned study is to produce a new material that can increase the corrosion and wear resistance of Mg alloys, which have high potential for use due to their low specific gravity, and that can expand the usage area of these alloys. For this purpose, it is aimed to improve the wear properties of the selected WE43 Mg alloys with the oxidized coating. In this study, after the surface preparations of the main material, WE43 Mg alloy, MoO_3 was coated by physical vapor deposition RF sputtering (PVD-RF sputtering) method. Surface morphology, structural and chemical properties of the prepared samples; surface profilometer, contact angle measurement tests and wear tests were carried out. The coating thicknesses were measured, the change in wear properties after coating was evaluated with the ball-on disc wear test and the volume losses of the samples were compared. As a result of the study, it was determined that the applied oxide coating layer improved the mechanical and physical properties of the alloy, and differences were observed in the surface properties and wettability tests.

Keywords: WE43, Magnesium alloy, Molibdenum oxide, RF Sputtering, PVD

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WE43 MAGNEZYUM ALAŞIMININ RF PÜSKÜRTME YÖNTEMİYLE MOLİBDENLİ OKSİDİZE KATMAN KAPLAMASI

Özet
Mg alaşımları otomotiv, uçak, uzay ve haberleşme sektörlerinde düşük özgül ağırlıkları, ağırlıklarına göre yüksek mukavemete sahip olmaları, yüksek boyutsal stabilite göstermeleri, elektromanyetik koruma ve darbe karakteristikleri nedenleri ile tercih edilmektedir. WE serisi, Mg, Y, Nd, nadir toprak, Zr elementlerini içeren Mg alaşımları, yüksek sürünme dayanımları ve diğer Mg alaşımlarına kıyasla iyi aşınma dayanımları olması nedeni ile havacılık uygulamalarında ana şanzıman ve muhafaza parçalarında tercih edilirler. Mg ve

alaşımlarının bütün avantajlarının yanında kullanım alanını sınırlandıran en önemli etken ise düşük korozyon ve aşınma dayanımına sahip olmasıdır. Yapılması planlanan çalışmada amaç, düşük özgül ağırlıkları nedeni ile kullanım potansiyeli yüksek olan Mg alaşımlarının korozyon ve aşınma dayanımını arttırabilecek ve bu alaşımların kullanım alanını genişletebilecek yeni bir malzeme üretimi sağlamaktır. Bu amaçla seçilen WE43 Mg alaşımlarının yapılan oksitli kaplama ile aşınma özelliklerinin geliştirilmesi amaçlanmıştır. Bu çalışmada, ana malzeme olan WE43 Mg alaşımı yüzey hazırlıkları yapıldıktan sonra, fiziksel buhar biriktirme RF sıçratma (PVD-RF sıçratma) yöntemi ile MoO_3 kaplanmıştır. Hazırlanan numunelerin yüzey morfolojisi, yapısal ve kimyasal özellikleri; yüzey profilometresi, temas açısı ölçüm testleri ve aşınma testleri gerçekleştirilmiştir. Kaplama kalınlıkları ölçülmüş, kaplama sonrası aşınma özelliklerindeki değişim ball-on disk aşınma testi ile değerlendirilmiş ve numunelerin hacim kayıpları karşılaştırılmıştır. Çalışma sonucunda uygulanan oksitli kaplama tabakasının alaşımın mekanik ve fiziksel özelliklerini geliştirdiği, yüzey özelliklerinde ve ıslatılabilirlik testlerinde farklılaşmalar gözlemlendiği tespit edilmiştir.

Anahtar Kelimeler: WE43, Magnezyum alaşımı, Oksitli Kaplama, RF Sıçratma, PVD

Teşekkür: Gerçekleştirilen çalışma Manisa Celal Bayar Üniversitesi Bilimsel Araştırma Koordinasyon Birimi tarafından 2020-074 no'lu proje ile desteklenmiştir.

GİRİŞ

Magnezyum (Mg) alaşımları diğer mühendislik malzemelerine kıyasla yüksek mukavemet/ağırlık oranı, elektrik/termal iletkenlik ve geri dönüştürülebilirlik kolaylığı nedeniyle havacılık [1-5], otomobil [2, 5-6] ve biyomedikal [7-11] alanlarında artan kullanım alanına ve öneme sahiptir. Mg ve alaşımlarının bütün avantajlarının yanında kullanım alanını sınırlandıran en önemli etken ise düşük korozyon ve aşınma dayanımına sahip olmasıdır. Magnezyumun standart elektrot potansiyeli çok düşük olduğu için agresif olarak nitelendirilen Cl^- iyonları gibi iyonları içeren nemli ortamlarda aktif hale gelmekte ve korozyona uğramaktadır [3, 4]. Ayrıca uygulamalarda yetersiz aşınma dayanımları nedeni ile yeterli kullanım alanı bulamamaktadır.

Fiziksel buhar biriktirme (PVD) yöntemi bir çok avantajı nedeni ile farklı sektörlerde tercih edilen bir kaplama tekniğidir. Bu teknik kullanılarak metaller, seramikler ve hatta polimerik esaslı malzemelere bile kaplanabilir ve altlık malzeme çok fazla ısınmadan uygulanabilir. Altlık malzemenin mekanik özelliklerinde herhangi bir düşüşe neden olmadığı için hem çok geniş bir aralıkta farklı malzemelere uygulanabilirliği hem de tercih edilebilirliği yüksektir [12, 13].

Tribolojik özellikleri iyileştirmek ve korozyon dayanımını arttırmak için Mg alaşımları üzerine uygulanan farklı kaplamalar mevcuttur. Yao ve ark. (2020), NiAl alaşımı üzerine biriktirilen MoO3 ve CuO kaplamaların tribolojik özellikleri iyileştirdiği gözlemlenmiştir [14]. Zhao ve ark. (2020), Nikel bazlı kendinden yağlamalı kompozit kaplamanın tribolojik özelliğini artırmak için yüzeyde MoO3 kaplamalar biriktirmiştir. Yapıdaki MoO_3, Mo_2C'ye dönüşmüş ve Cr (Mo) bakımından zengin borür kaplamanın aşınma direncini artırmıştır [15]. Shi ve ark. (2020) selenyum içerikli kaplamaları WE43 alaşımı üzerine mikro-ark oksidasyonu tekniği ile uygulamış ve alaşımın korozyon dayanımını bir miktar arttırmayı başarmışlardır [16].

MALZEME VE METOT

0,5 m uzunluk ve 20 mm çapta ekstrüzyon yöntemi ile üretilen WE43 Mg alaşımları (3,94 Y; 2,19 Nd; 0,92 Gd; 0,51 Zr; Kalan Mg) hassas kesme cihazı kullanılarak 4 mm kalınlıkta olacak şekilde kesilmiştir. Elde edilen altlık numunelerin yüzeyleri kaplama işlemi öncesi hazırlanmış ve önce 2500 gride kadar SiC zımparalar ile zımparalanmış ve sonrasında 6 µm parlatıcı solüsyon ve çuha kullanılarak parlatılmıştır. Zımpara izi temizlenen tüm numuneler aynı şartlarda kumlama işlemine tabi tutulmuştur. Kumlama işleminde S110 kodlu kumlama bilyeleri 10 cm mesafeden 0.5 MPa basınç ile yüzeylere uygulanmış ve pürüzlendirme işlemleri gerçekleştirilmiştir. Tüm numune grupları ara aşamalarda etanol ile temizlenip hızlıca soğuk hava ile kurutulmuş ve kumlama işlemleri sonrası etanol ile ultrasonik banyoda 20 dk süre ile temizlenmiştir. Temizlik işlemi sonrası yine soğuk basınçlı hava ile kurutulmuştur.

Kaplama işlemleri fiziksel Buhar Biriktirme Magnetron/Radyo Frekansı Sıçratma Sistemi (PVD-RF Sıçratma) kullanılarak gerçekleştirilmiştir. Kaplama işlemleri OptoSense KYKY RF sıçratma cihazında 3 mm kalınlıkta Cu altlıklı %99,9 saflıkta MoO_3 hedef kullanılarak gerçekleştirilmiştir.

Hedef ile numune tutucu arasındaki mesafe 50 mm olacak şekilde ayarlanmış ve kaplama haznesi kapatıldıktan sonra içerideki basınç düşürülerek bir süre düşük miktarda Ar gazı ile süpürme işlemi gerçekleştirildi. Sonrasında basınç $0{,}9x10^{-3}$ Pa alacak şekilde ayarlandı ve 100 SCCM ile hazneye inert Ar ve 20 SCCM O_2 gazı gönderilirken RF güç kaynağı 200W olacak şekilde işlem başlatıldı. Kaplama kalınlıklarının homojen olması için numune tutucu, kaplama süresi boyunca 2 m/dk sabit hızda döndürülmüştür. Kaplama işlemi 180 dakika olacak şekilde uygulanmıştır.

Numunelerin yüzey incelemelerinin yapılabilmesi amacı ile JEOL/JSM 6060 Modelli taramalı elektron mikroskobu (SEM) kullanılmıştır. Yüzeyden alınan görüntülerde 1000X büyütme kullanılmıştır. Ayrıca kaplama kalınlığı, numune kesitten alınan ölçümler ile ölçülmüş olup görüntülemelerde yine SEM kullanılmıştır. Kaplama kalınlığı 2500X büyütmede alınmış ve tüm SEM incelemelerinde 20kV hızlandırma gerilimi kullanılmıştır.

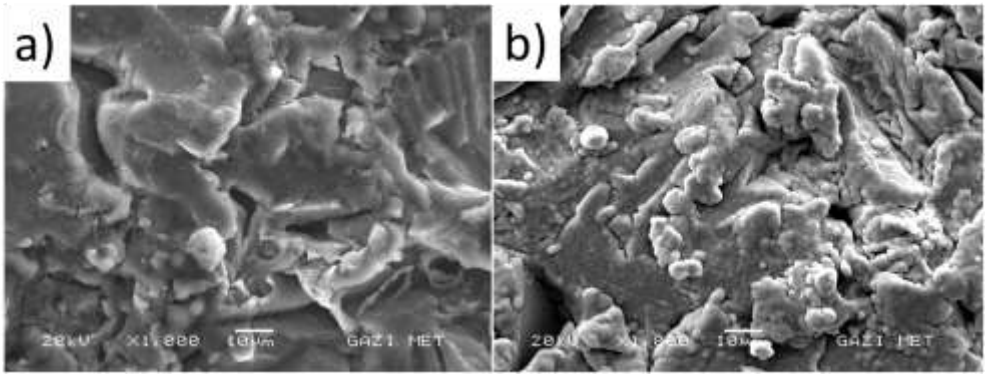
Morfolojik incelemelerin detaylı yapılabilmesi için numunelerin X-ışını kırınımları Bruker D8 Advence cihazında 10-90° 2 teta aralığında yapılan ölçümler ile gerçekleştirilmiştir. Ölçümlerde saniyede 0,03° tarama hızı, CuKα (λ=1,5418 Å) ışını, 40 mA akım ve 40 V voltaj kullanılmıştır.

Üretilen tüm numunelere ball-on disk aşınma testi uygulanmıştır. Deneyler, CSM Tribometer ball-on disk aşınma test düzeneği kullanılarak gerçekleştirilmiştir oda sıcaklığında kuru ortamda tek tekrarlı olarak gerçekleştirilmiştir. Aşındırıcı karşı malzeme olarak çapı 6 mm olan Al_2O_3 bilyeler kullanılmıştır. Aşınma testi 2,5 mm yarıçapta 2 N yük ile 50 m mesafeyi 10 cm/s hız ile aşındıracak şekilde gerçekleştirilmiştir.

Aşınma işlemi sonrası sürtünme katsayıları hesaplanmıştır. Ayrıca aşınma sonrası Nikon marka stereo mikroskop kullanılarak iz genişlikleri ölçülmüş ve Mitutoyo Surftest SJ-310 marka pürüzlülük ölçüm cihazı ile aşınma derinlik profilleri çıkarılmış ve hacim kayıpları hesaplanmıştır. Aşınma karakteristiğinin detaylı incelemesinin yapılabilmesi için aşınma izleri 50X büyütmede 20 kV hızlandırma gerilimi kullanılarak SEM mikroskobu ile görüntülenmiş ve sonuçlar tartışılmıştır.

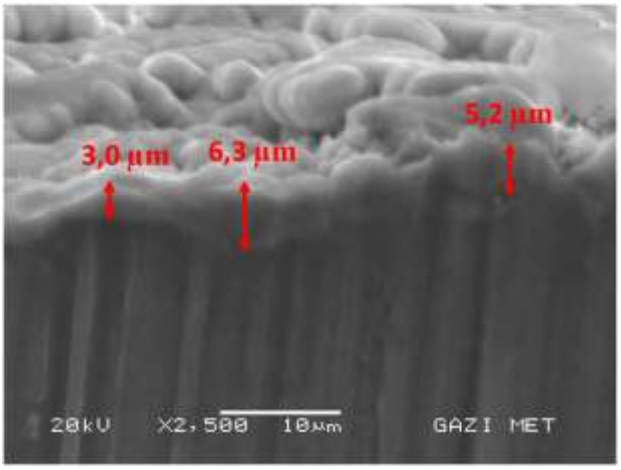
BULGULAR VE TARTIŞMA

Kaplanmamış ve kaplanmış numunelerin yüzeylerinden alınan ve morfolojik yapıyı yansıtan SEM görüntüleri Şekil 1'de verilmiştir. Şekil 1.a kaplamasız ve kumlanmış numune yüzeyine ait SEM görüntüsünü ve Şekil 1.b MoO_3 kaplı numunenin görselini içermektedir. Kaplanmış numunede köşeli ve keskin hatların daha yumuşak gözlemlenmesi dışında, kaplanmış yüzeyde altlık özelliklerinin sürdürüldüğü ve morfolojik olarak birbirine benzer şekilde gözlemlendiği söylenebilir.



Şekil 1. a) kaplamasız, b) MoO_3 kaplı numunelerin SEM görüntüleri

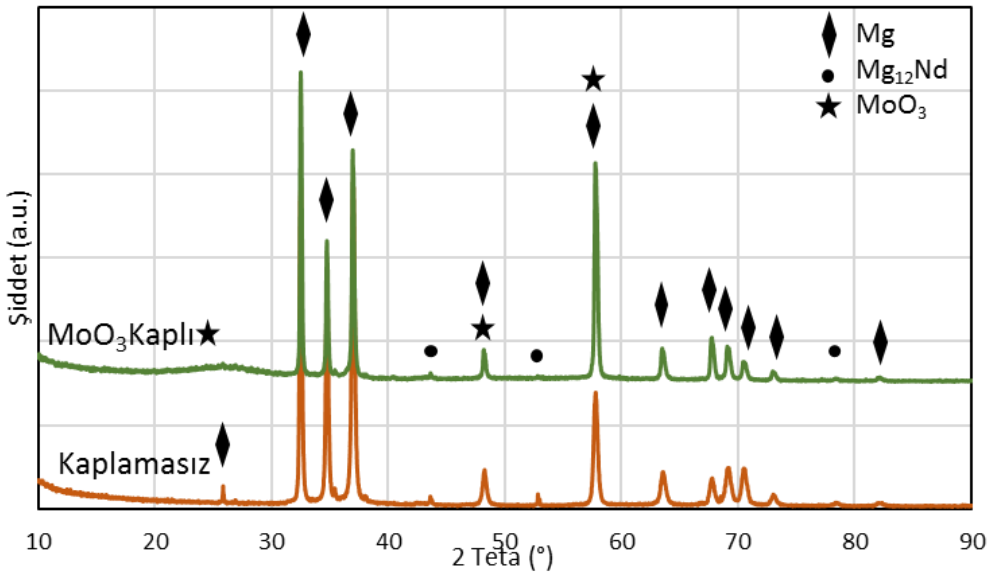
Numune kesitlerinden gerçekleştirilen kalınlık ölçümünde kaplama kalınlığının ortalama 4,8 µm olarak elde edildiği gözlemlenmiştir. Bu değer kumlama tabakasının farklı derinliklere sahip yüzey eldesi sağlaması sebebi ile bazı bölgelerde daha ince veya daha kalın olacak şekilde gözlemlenmiştir. Dolayısıyla kaplama kalınlığında bir homojenlik gözlemlenmemiştir.



Şekil 2. MoO_3 tabakanın kaplama kalınlığı

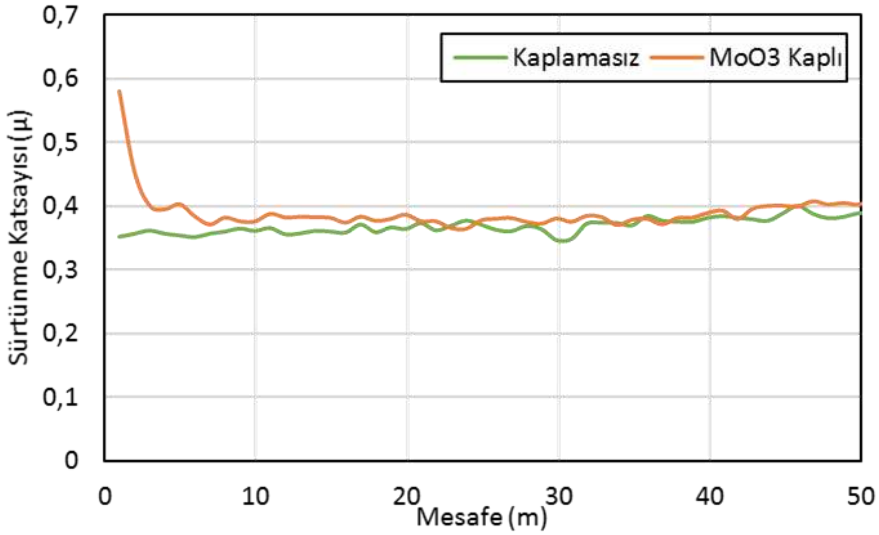
kaplamasız numunede magnezyum ve WE43 Mg alaşımındaki alaşım elementleri ile mg arasında oluşan $Mg_{12}Nd$ fazına ait pikler gözlemlenmiştir. Kaplama tabakası ile altlık malzemeye ait pik şiddetlerinin bir miktar azaldığı tespit edilmiş olup, kaplamasız numuneden farklı olarak kaplama tabakasına ait olduğu tespit edilen MoO_3 karakteristik pikleri de gözlemlenmiştir. Kaplanmış numunede altlık malzemesinin piklerinin gözlemleniyor olması kaplama tabakasının ince oluşu ve XRD analizinin ince film modunda çekilmemesi sebebiyle gözlemlendiği tespit edilse de karakteristik kaplama piklerinin varlığı

ve altlığa ait piklerin azalması kaplama tabakasının varlığının ve doğru kafes yapısında elde edilişinin bir göstergesidir. MoO_3 kaplanmış numunelerin XRD grafiği Şekil 3 incelendiğinde, Jadkar vd. (2017) çalışmalarında da gözlemlenen kaplama tabakasına ait olduğu düşünülen pikler gözlemlenmiştir.



Şekil 3. Numunelerin XRD grafikleri

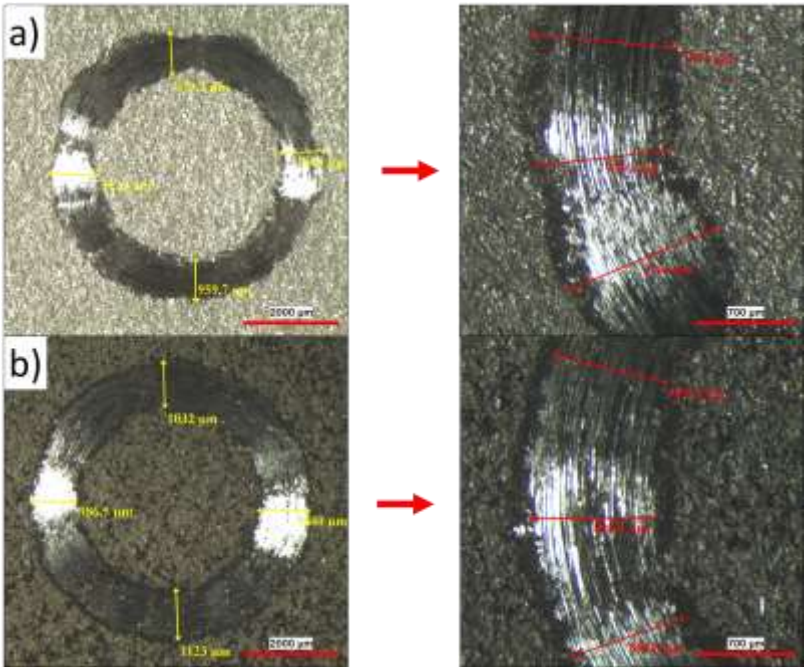
Sürtünme katsayıları aşınma verilerinin tartışılmasında önem arz etmekte olup Şekil 4, kaplamasız ve MoO_3 kaplı numunelere ait sürtünme katsayısı grafiğni içermektedir. MoO_3 kaplı numunenin sürtünme katsayısı değerleri aşınma periyodunun başlangıcında yaklaşık iki kat kadar daha yüksek seyretmekte olup toplam aşınma mesafesinin yarısına gelindiğinde kaplanmış ve kaplanmamış numunelerin sürtünme katsayıları arasında anlamlı bir fark gözlemlenememiştir. Her iki numune için de aşınma mesafesinin sonunda sürtünme katsayısı ortalaması yaklaşık 0,4 olarak tespit edilmiştir.



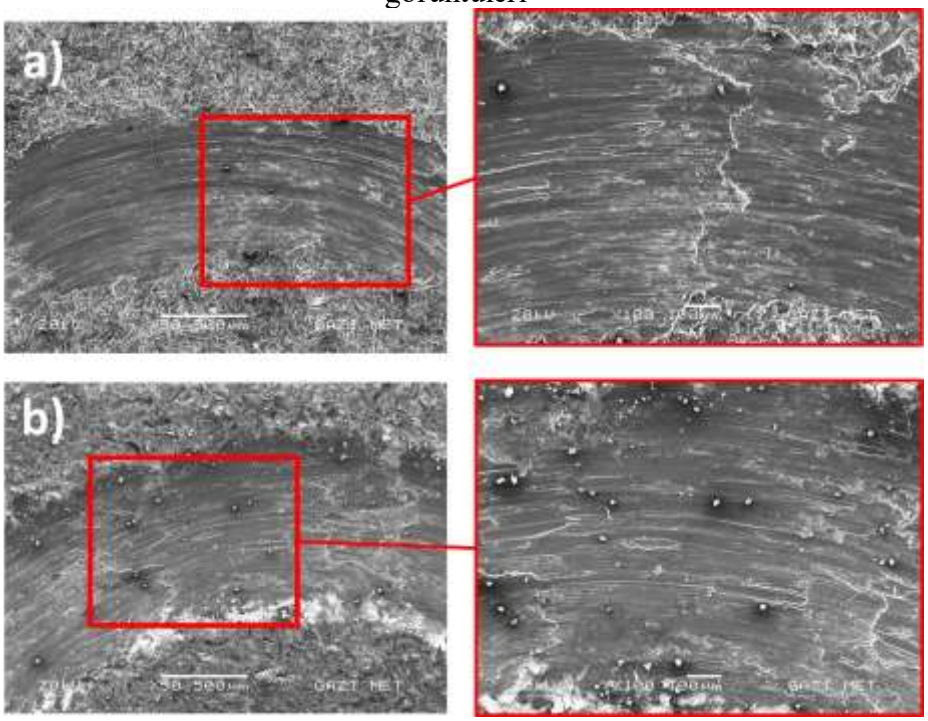
Şekil 4. Aşınma sürtünme katsayılarını gösteren grafik

Aşınma izlerinin incelendiği görseller Şekil 5'te numunelerin stereo mikroskop ve Şekil 6'da SEM görüntüleri olarak verilmiştir. Yapılan genel incelemelerde, kaplamasız numunede daha

heterojen ve bazı bölgelerde yoğunlaşan bir aşınma bölgesi ve MoO_3 kaplı numunede daha homojen iz genişliğine sahip bir aşınma izi tespit edilmiştir. Ayrıca Şekil 6'da verilen SEM görüntüleri de detaylı incelendiğinde kaplamasız numunenin aşınma izinde altlık malzemede kırık ve çatlak yapılar gözlemlenmiştir. Kaplanmış numunede ise MoO_3 tabakasının yağlayıcı etkisi nedeni ile [15] bu çatlaklar daha az gözlemlenmiştir.



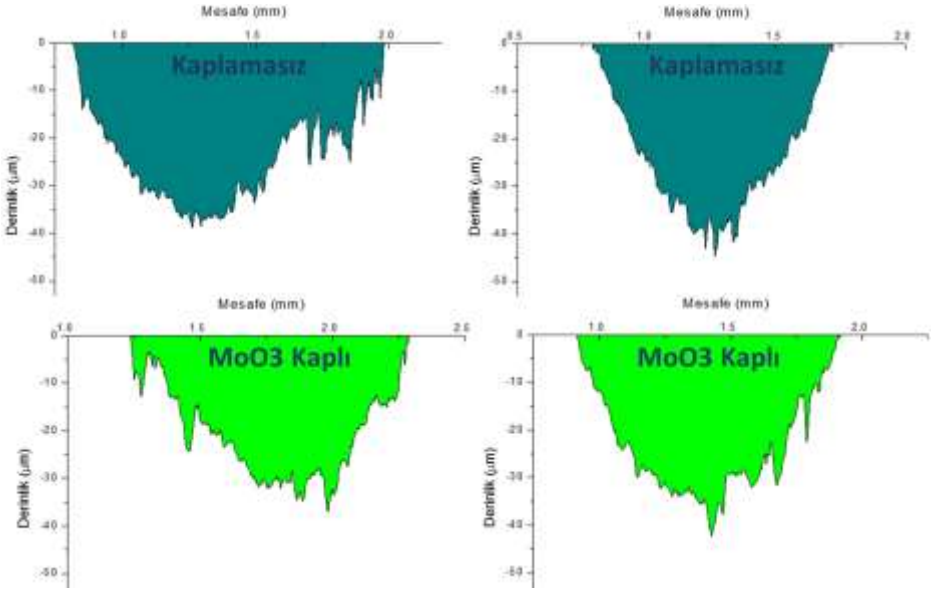
Şekil 5. a) kaplamasız, b) MoO_3 kaplı numunelerin aşınma izlerinin stereo mikroskop görüntüleri



Şekil 6. Aşınma sonrası SEM görüntüleri a) kaplamasız b) MoO_3 kaplı

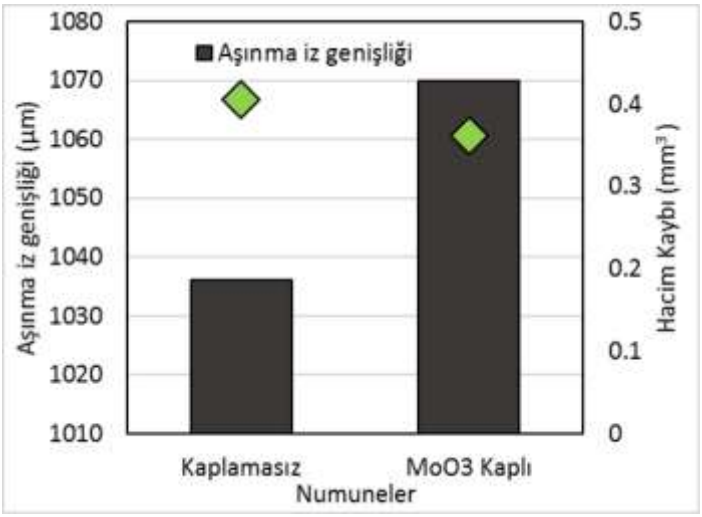
Aşınma izlerinin derinlikleri de aşınma karakteristikleri hakkında detaylı bilgi verir. İzlere ait iki farklı bölgeden ölçülen derinlik profil grafikleri Şekil 7'de verilmiştir. Kaplamasız

numunedeki heterojenlik derinlik profillerine de yansımış olup, kaplamalı numunelerde toplan aşınma alanlarının daha dar olduğu ve derinliklerin kaplamasız numuneye göre daha az olduğu gözlemlenmektedir.



Şekil 7. Profilmetre grafikleri

Hesaplanan toplam hacim kaybı ve iz genişliklerinin birlikte değerlendirildiği Şekil 8'de kaplamasız numunede toplam hacim kaybının MoO_3 kaplı numuneye göre daha fazla olduğu, iz genişliğinin daha dar fakat lokalize bir şekilde derinleşerek seyrettiği tespit edilmiştir.



Şekil 8. Toplam hacim kaybı ve iz genişlik değişimi grafiği

SONUÇ

Çalışma kapsamında kumlanmış ve kaplanbmamış WE43 Mg alaşımı ile RF sıçratma yöntemi ile MoO_3 kaplanan numunenin aşınma karakteristiği karşılaştırılmış ve morfolojileri incelenmiştir. Kaplanmış numunede köşeli ve keskin hatların daha yumuşak gözlemlenmesi dışında, kaplanmış yüzeyde altlık özelliklerinin sürdürüldüğü ve morfolojik olarak birbirine benzer şekilde gözlemlendiği söylenebilir. Kaplama kalınlığı 4,8 µm olarak elde edilmiş olup kaplama kalınlığı bölgelerde heterojen olarak elde edilmiştir. XRD analizlerinde

kaplanmamış numunede altlık malzemeye ait WE43 Mg alaşım pikleri gözlemlenirken, kaplanmış numunede kaplama tabakası olan MoO_3 karakteristik pikleri gözlemlenmiştir. MoO_3 kaplı numunenin sürtünme katsayısı değerleri aşınma periyodunun başlangıcında yaklaşık iki kat kadar daha yüksek seyretmekte olup toplam aşınma mesafesinin yarısına gelindiğinde kaplanmış ve kaplanmamış numunelerin sürtünme katsayıları arasında anlamlı bir fark gözlemlenememiştir. Aşınma izleri incelendiğinde ise kaplamasız numunede toplam hacim kaybının MoO_3 kaplı numuneye göre daha fazla olduğu, iz genişliğinin daha dar fakat lokalize bir şekilde derinleşerek seyrettiği tespit edilmiştir. Kaplamasız numunenin aşınma izinde altlık malzemede kırık ve çatlak yapılar gözlemlenirken, kaplanmış numunede ise MoO_3 tabakasının yağlayıcı etkisi nedeni ile bu çatlaklar daha az gözlemlenmiştir.

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THE EFFECT OF SURFACE ROUGHNES VALUES ON MOLYBDENE OXIDIZED LAYERS COATING OF WE43 MAGNESIUM ALLOY WITH RF SPUTTER METHOD

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Abstract
Mg alloys are today's attractive alloys for use in different applications due to their low specific gravity. It has a widespread use in aerospace, aviation and especially in the automotive industries. Magnesium alloys are named with different codes according to the element percentages they contain. The WE43 Mg alloy group contains Mg, Y, Nd, rare earth elements and is preferred in the mentioned industries because of its high creep resistance. However, the wear and corrosion resistance of magnesium alloys is quite low compared to aluminum and its alloys. In the sector, magnesium alloys are trying to replace aluminum alloys because they are lighter, but due to these disadvantages, the usage area is somewhat limited. If these disadvantages are developed, magnesium and its alloys have a high potential and the usage area can be increased. In the study, it was aimed to increase the wear resistance of magnesium and its alloys for use in the automotive industry. For this purpose, magnesium alloys, which are advantageous due to their lightness, are coated with a protective MoO3 layer and characterized. In order to examine the effect of the pre-treatments prepared before coating on the coatings, two groups of WE43 Mg alloys, produced in different roughness values with two different surface properties and different surface preparations, were coated with MoO3 by physical vapor deposition RF sputtering (PVD-RF sputtering) method under the same conditions. Surface morphology, structural and chemical properties of the prepared samples; surface profilometer, contact angle measurement tests and wear tests were carried out. The coating thicknesses were measured, the change in wear properties after coating was evaluated with the ball-on disc wear test and the volume losses of the samples were compared. As a result of the study, the effect of different roughness values on the base material was examined and it was determined that increasing roughness values increased the coating thickness. Surface roughness and wettability properties directly affect the coating morphology and also affect the wear characteristics.

Keywords: WE43, Surface Rougnesses, Magnesium alloy, Molibdenum oxide, RF Sputtering, PVD

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WE43 MAGNEZYUM ALAŞIMININ RF PÜSKÜRTME YÖNTEMİYLE MOLİBDENLİ OKSİDİZE KATMAN KAPLAMASINDA YÜZEY PÜRÜZLÜLÜK DEĞERLERİNİN ETKİSİ

Özet

Mg alaşımları düşük özgül ağırlıkları nedeni ile farklı uygulamalarda kullanım için günümüzün ilgi çekici alaşımlarıdır. Uzay, havacılık ve özellikle otomotiv endüstrilerinde yaygın bir kullanıma sahiptir Magnezyum alaşımları içerdikleri element yüzdelerine göre farklı kodlar ile isimlendirilmektedir. WE43 Mg alaşımı grubu ise Mg, Y, Nd, nadir toprak elementlerini içermekte ve bahsedilen endüstrilerde sürünme dayanımının da yüksek olması nedeni ile tercih edilmektedir. Fakat magnezyum alaşımlarının aşınma ve korozyon dayanımları, alüminyum ve alaşımlarına kıyasla oldukça düşüktür. Sektörde magnezyum alaşımları alüminyum alaşımlarının daha hafif olması nedeni ile yerini almaya çalışmakta fakat bu dezavantajları nedeniyle kullanım alanı bir miktar sınırlanmaktadır. Bu dezavantajlarının geliştirilmesi durumunda magnezyum ve alaşımları yüksek bir potansiyele sahip olup kullanım alanı arttırılabilir. Yapılan çalışmada, magnezyum ve alaşımlarının otomotiv sektöründe kullanımı için aşınma dayanımlarının arttırılması hedeflenmiştir. Bu amaçla, hafiflikleri nedeni ile avantajlı durumda olan magnezyum alaşımları koruyucu MoO_3 tabakası ile kaplanmış ve karakterize edilmiştir. Yapılan kaplamalarda kaplama öncesi hazırlanan ön işlemlerin etkisinin incelenebilmesi amacı ile iki farklı yüzey özelliğine sahip farklı pürüzlülük değerlerinde üretilen ve yüzey hazırlıkları farklılaştırılan iki grup WE43 Mg alaşımı aynı koşullar altında fiziksel buhar biriktirme RF sıçratma (PVD-RF sıçratma) yöntemi ile MoO_3 kaplanmıştır. Hazırlanan numunelerin yüzey morfolojisi, yapısal ve kimyasal özellikleri; yüzey profilometresi, temas açısı ölçüm testleri ve aşınma testleri gerçekleştirilmiştir. Kaplama kalınlıkları ölçülmüş, kaplama sonrası aşınma özelliklerindeki değişim ball-on disk aşınma testi ile değerlendirilmiş ve numunelerin hacim kayıpları karşılaştırılmıştır. Çalışma sonucunda farklı pürüzlülük değerlerinin ana malzemeye etkisi incelenmiş ve artan pürüzlülük değerlerinin kaplama kalınlıklarını arttırdığı tespit edilmiştir. Yüzey pürüzlülük ve ıslatılabilirlik özellikleri ise doğrudan kaplama morfolojisini etkilemekte ve aşınma karakteristiğinde de etkili olmaktadır.

Anahtar Kelimeler: WE43, Pürüzlük, Magnezyum alaşımı, Oksitli Kaplama, RF Sıçratma, PVD

Teşekkür: Gerçekleştirilen çalışma Manisa Celal Bayar Üniversitesi Bilimsel Araştırma Koordinasyon Birimi tarafından 2020-074 no'lu proje ile desteklenmiştir.

GİRİŞ

Magnezyum alaşımları yüksek mukavemet/ağırlık oranına sahip olması nedeni ile yapısal malzemelerde ve özellikle hafifliğin ön planda olduğu uygulamalarda çokça tercih edilmektedir. İçeriğindeki alaşım elementinin sağladığı özelliklere göre kullanım alanı değişmektedir. WE43 Mg alaşımı Y (%3,7-4,3), nadir toprak elementi (%2,3-3,5) ve Zr (%0,2-0,4) içeren bir alaşımdır. Hem ortam sıcaklığında hem de yüksek sıcaklıklarda iyi mekanik özellikler ve iyi korozyon direnci ile karakterize edilen bu alaşımın en büyük avantajı, performanstan ödün vermeden ağırlık azaltmanın gerekli olduğu uygulamalarda kullanılabilmesidir. Alüminyuma kıyasla %35, titanyuma kıyasla %60 daha hafif bir yapı malzemesi olup hafif metal alaşım grubuna girmektedir. Özellikle hafifliği sayesinde kullanıldığı araçlarda ağırlığı düşürmesinin yanı sıra yakıt tüketimini de azaltmaktadır (Turowska ve Adamiec, 2015; Balaji vd., 2021; Predko vd., 2021). Bu sebeplerle, helikopter şanzımanlarının parçaları, güç sistemleri, uçak motorları, askeri uçakların dişli kutuları, spor arabalar, piston ve silindirler gibi özel uygulamalarda kullanılmaktadır. Ayrıca bunlara

ilaveten son yıllarda tıptaki uygulamalar için bozunabilir vidalar, plakalar ve hatta stent olarak da değerlendirilmektedir. Mg alaşımlarının en önemli dezavantajı çalışma sıcaklıklarını ortalama 125 °C ile sınırlayan düşük sürünme direncidir. Ancak WE43 alaşımında bu sıcaklık nadir toprak elementlerinin, itriyum ve zirkonyumun eklenmesi ile ortalama 250-300°C'ye kadar çıkarılabilmektedir (Kubásek vd., 2019; Junak, 2020). Bu alaşımın otomotiv sektöründe kullanımını arttırmaya yönelik aşınma ve korozyon performansını iyileştirmek için çeşitli yöntemlerle koruyucu kaplamalar yapılmaktadır. Malayoğlu ve Tekin (2014) Plazma elektrolitik oksidasyon (PEO) yöntemi ile kaplamış ve bazı numuneleri ise kaplama sonrasında MoS_2 ile muamele ederek aşınma performanslarını incelemiştir. Yapılan kaplama sonrası PEO'nun aşınma performansını iyileştirdiği kaydedilmiştir (Malayoğlu ve Tekin, 2014). Biyomedikal çalışmalar için ise korozyona karşı yüzeye genelde kalsiyum fosfat (CP) esaslı ve kompozit kaplamalar uygulanması söz konusudur (Zhou vd., 2020; Zhou vd., 2021).

Tribolojik özellikleri iyileştirmek ve korozoyon direncini arttırmak için Mg alaşımlarına uygulanan farklı kaplamalar mevcuttur. Son yıllarda yapılan bazı çalışmalara göre; Yao vd. (2020), NiAl alaşımı üzerine biriktirilen MoO_3 ve CuO kaplamaların tribolojik özellikleri iyileştirdiğini belirtmiştir. Zhao vd. (2020), nikel bazlı kendinden yağlamalı kompozit kaplamanın tribolojik özelliğini arttırmak için yüzeyde MoO_3 kaplamalar biriktirdiği ve olumlu sonuçlar elde ettiği gözlemlenmiştir.

Bu çalışmada ise düşük sıcaklıklarda uygulanabilen fiziksel buhar biriktirme (PVD) metodu ile farklı yüzey özelliklerine sahip iki grup WE43 Mg altlıklar üzerine MoO_3 biriktirilerek yüzeyin aşınma performansını ve özelliklerini nasıl etkilediği araştırılmıştır.

MALZEME VE METOT

Ekstrüze çubuklar halinde 0,5 m uzunluk ve 20 mm çapında temin edilen WE43 Mg alaşımları (3,94 Y; 2,19 Nd; 0,92 Gd; 0,51 Zr; Kalan Mg) hassas kesme yöntemi ile dilimlenerek 4 mm kalınlıkta 20 mm çapında silindirik altlıklar elde edilmiştir. Elde edilen altlık numunelerin yüzeyleri kaplama işlemi öncesi hazırlanmış ve önce 2500 gride kadar SiC zımparalar ile zımparalanmış ve sonrasında 6 µm parlatıcı solüsyon ve çuha kullanılarak parlatılmıştır. Zımpara izi temizlenen numuneler aynı şartlar altında 10 cm mesafeden 0.5 MPa basınç ile uygulanmıştır. Kumlama işlemlerinde S110 kodu ile ticari olarak kullanılan çelik bilyeler kullanılmıştır. Diğer grup numune ise 3µm ve 1µm parlatıcı solüsyonlar ile parlatıldıktan sonra temizlik aşamasına geçilmiştir.

Tüm numune grupları ara aşamalarda etanol ile temizlenip hızlıca soğuk hava ile kurutulmuş ve kumlama işlemleri sonrası etanol ile ultrasonik banyoda 20 dk süre ile temizlenmiştir. Temizlik işlemi sonrası yine soğuk basınçlı hava ile kurutulmuştur.

İki farklı yüzeyin kaplama tabakasına etkilerinin araştırıldığı çalışmada yüzey pürüzlülük ölçümleri için e Mitutoyo Surftest SJ-310 cihazı kullanılmıştır.

Kaplama işlemleri fiziksel Buhar Biriktirme Magnetron/Radyo Frekansı Sıçratma Sistemi (PVD-RF Sıçratma) kullanılarak gerçekleştirilmiştir. Kaplama işlemleri OptoSense KYKY RF sıçratma cihazında 3 mm kalınlıkta Cu altlıklı %99,9 saflıkta MoO_3 hedef kullanılarak gerçekleştirilmiştir.

Hedef ile numune tutucu arasındaki mesafe 50 mm olacak şekilde ayarlanmış ve kaplama haznesi kapatıldıktan sonra içerideki basınç düşürülerek bir süre düşük miktarda Ar gazı ile

süpürme işlemi gerçekleştirildi. Sonrasında basınç $0,9x10^{-3}$ Pa alacak şekilde ayarlandı ve 100 SCCM ile hazneye inert Ar ve 20 SCCM O_2 gazı gönderilirken RF güç kaynağı 200W olacak şekilde işlem başlatıldı. Kaplama kalınlıklarının homojen olması için numune tutucu, kaplama süresi boyunca 2 m/dk sabit hızda döndürülmüştür. Kaplama işlemi 180 dakika olacak şekilde uygulanmıştır.

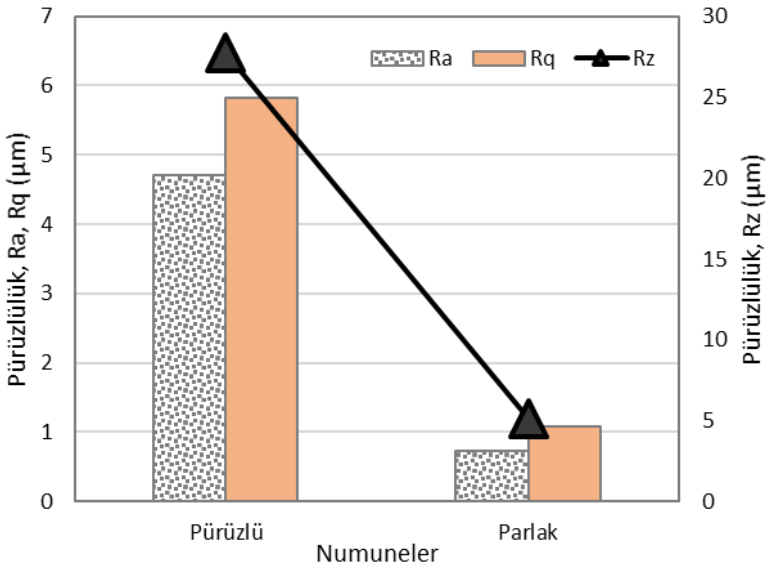
Numunelerin yüzey incelemelerinin yapılabilmesi amacı ile JEOL/JSM 6060 Modelli taramalı elektron mikroskobu (SEM) kullanılmıştır. Yüzeyden alınan görüntülerde 250X büyütme kullanılmıştır. Ayrıca kaplama kalınlıkları, numune kesitten alınan ölçümler ile ölçülmüş olup görüntülemelerde yine SEM kullanılmıştır. Kaplama kalınlıkları 2500X büyütmede alınmış ve tüm SEM incelemelerinde 20kV hızlandırma gerilimi kullanılmıştır.

Üretilen tüm numunelere ball-on disk aşınma testi uygulanmıştır. Deneyler, CSM Tribometer ball-on disk aşınma test düzeneği kullanılarak gerçekleştirilmiştir oda sıcaklığında kuru ortamda tek tekrarlı olarak gerçekleştirilmiştir. Aşındırıcı karşı malzeme olarak çapı 6 mm olan Al_2O_3 bilyeler kullanılmıştır. Aşınma testi 2,5 mm yarıçapta 2 N yük ile 50 m mesafeyi 10 cm/s hız ile aşındıracak şekilde gerçekleştirilmiştir.

Aşınma işlemi sonrası sürtünme katsayıları hesaplanmıştır. Ayrıca aşınma sonrası Nikon marka stereo mikroskop kullanılarak iz genişlikleri ölçülmüş ve yüzey pürüzlülük ölçümlerinde kullanılan pürüzlülük ölçüm cihazı ile aşınma derinlik profilleri çıkarılmış ve hacim kayıpları hesaplanmıştır. Aşınma karakteristiğinin detaylı incelemesinin yapılabilmesi için aşınma izleri 50X büyütmede SEM mikroskobu ile görüntülenmiş ve sonuçlar tartışılmıştır.

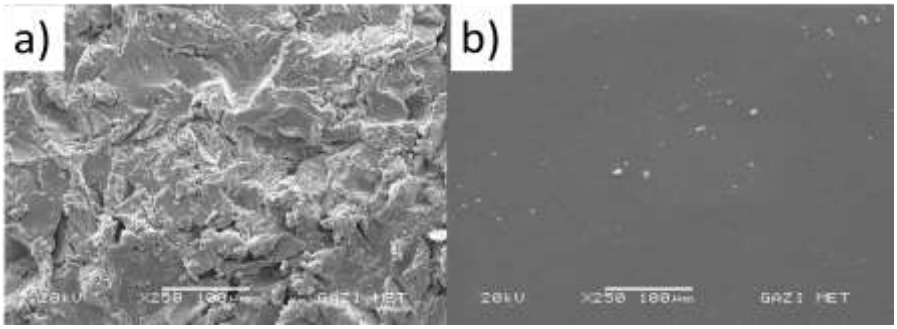
BULGULAR VE TARTIŞMA

Kumlama işlemi sonrası pürüzlü olarak ve parlatma işlemi sonrası parlak olarak isimlendirilen numunelkere ait yüzey pürüzlülük grafikleri Şekil 1'de verilmiştir. Grafiklerde ortalama pürüzlüük ve en derin noktaları gösteren pürüzlülük değerleri birbiri ile uyumlu ve tutarlıdır. Kumlama işlemi sonrası ortalama pürüzlülük değeri pürüzlü numune yaklaşık 4,8 µm iken parlak numunede yaklaşık 1 µm olarak elde edilmiştir.



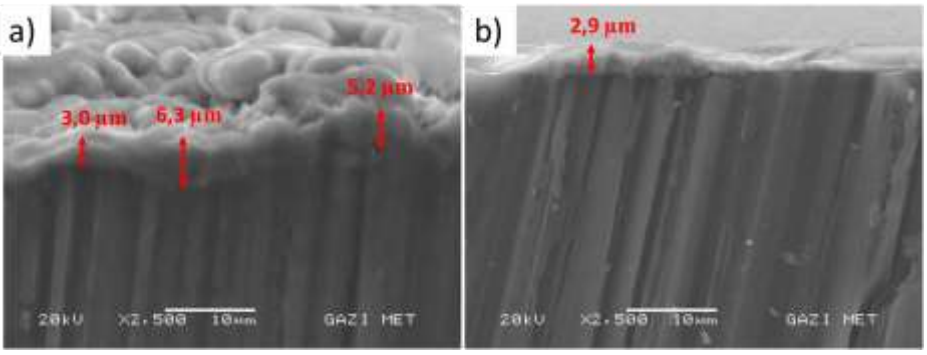
Şekil 1. Yüzey pürüzlülükleri

Elde edilen pürüzlülük değerleri ve Şekil 2'de verilen kaplanmış yüzeylere ait SEM görselleri birlikte incelendiğinde numune yüzey morfolojileri daha anlamlı olmaktadır. Şekil 2.a'da kaplanmış pürüzlü numune yüzeyinde morfolojik yapılarda farklılaşmalar görülmektedir. Altlıkta kumlama nedeni ile oluşan pürüzlü yapı kaplama sonmrası da korunmuştur. Parlak numune yüzeyinde de aynı durum mevcuttur. Altlık ile benzer yapıda bir kaplama tabakası eldesi gözlemlenmiştir. Numune yüzeyinde bazı noktalarda ZnO farklılaşmaları yüksek oksijen konsantrasyonu nedeni ile gözlemlenmiş olabilir.



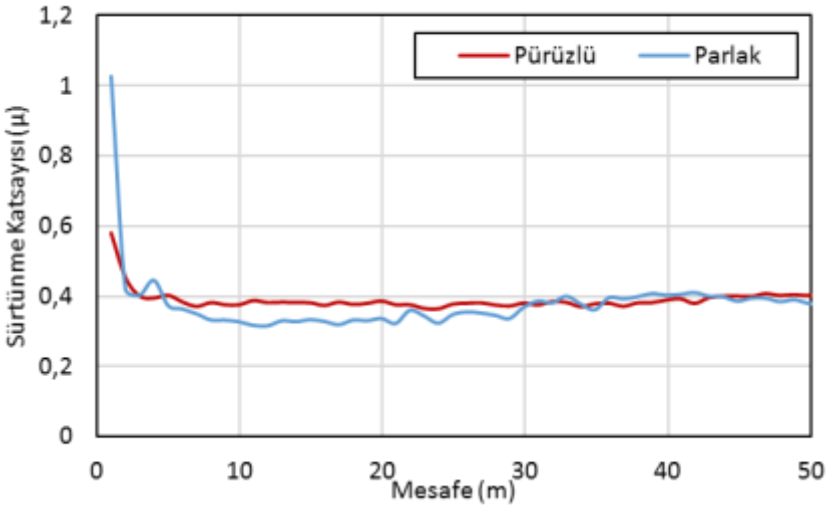
Şekil 2. SEM görüntüleri a) Pürüzlü, b) Parlak

Kaplanmış numunelerinin kalınlıkları Şekil 3'te verilmiş olup, görüntüler kaplanmış numune kesitlerinden alınmıştır. Ortalama kaplama kalınlıkları pürüzlü numunede 4,8 µm ve parlak numunede 2,9 µm olarak elde edilmiştir. Her iki numunede de ara yüzeyde bir uyumsuzluk, boşluk veya çatlak gözlemlenmemiştir. Parlatılmış numunedeki büyümenin altlık ile paralellik göstermesi sonucu daha homojen olduğu söylenebilir.



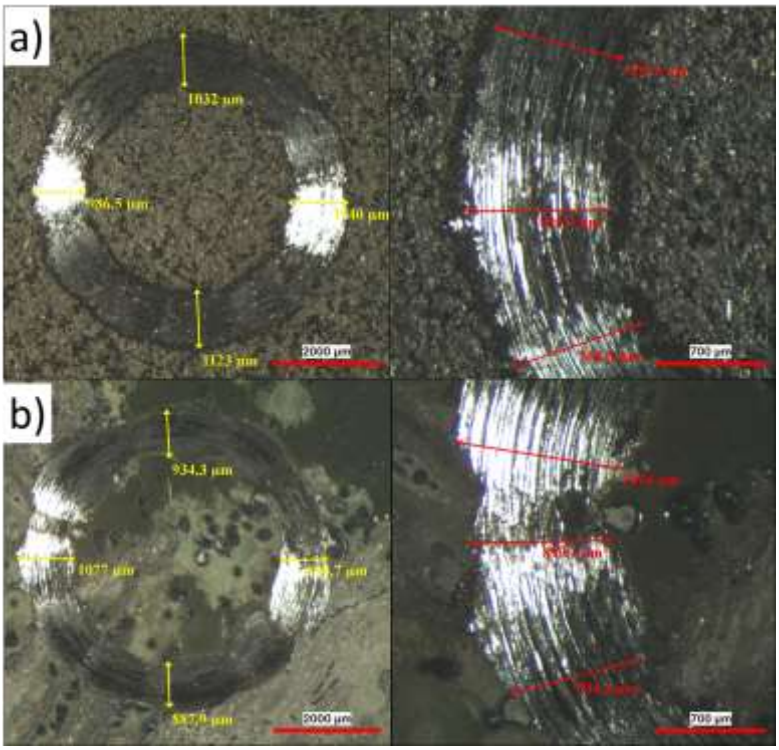
Şekil 3. Kaplama kalınlıkları a) Pürüzlü, b) Parlak

Numunelerin sürtünme katsayılarını gösteren grafik Şekil 4'te verilmiştir. Numuneler karşılaştırıldığında, parlatılmış numunenin başlangıç sürtünme katsayısı değerinin her iki numunenin ortalama sürtünme katsayısı değerlerinden 2,5 kat daha fazla olduğu görülmektedir. Kaplama tabakası ince olmasına rağmen parlak numunede bir miktar daha etkili olmuş ve aşınma başlangıcında daha dayanıklı olarak gözlemlenmiştir. Aşınma mesafesi ilerledikçe sürtünme katsayıları birbirine yaklaşık seytretmiştir.



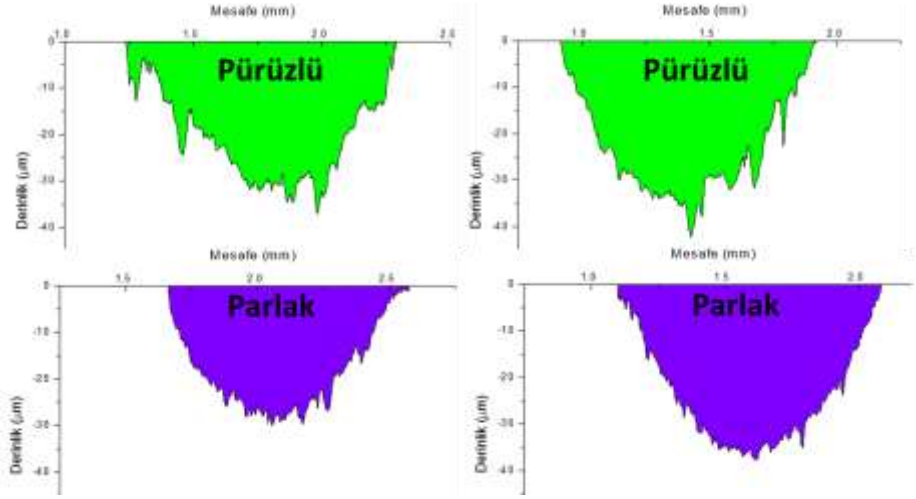
Şekil 4. Sürtünme katsayıları

Numunelerin aşınma sonrası iz genişlikleri stereo mikroskop yardımı ile ölçülmüş ve Şekil 5'te verilmiştir. İz genişlikleri bize aşınmanin lokalize bir şekilde veya yaygın bir şekilde gözlemlendiğinin bir göstergesidir. Şekil 5.a'da pürüzlü numuneye ait iz incelendiğinde, aşınma izinin Şekil 5.b'deki parlak numuneye göre daha yaygın ve geniş olduğu tespit edilmiştir. Şekil 5'b de bazı noktalarda aşınma şiddetlenirken bazı bölgelerde azalmıştır. Bu durum kaplama tabakası olarak kullanılan MoO_3'ün kendini yağlama özelliği nedeni ile sağlanmış olabileceği düşünülmektedir Zhao vd. (2020).Pürüzlendirilmiş numunede yağlama özelliği pürüzlü yüzey nedeni ile engellenmiş ve aşınma dayanımının arttırılmasında yeterince etkili olamamıştır.



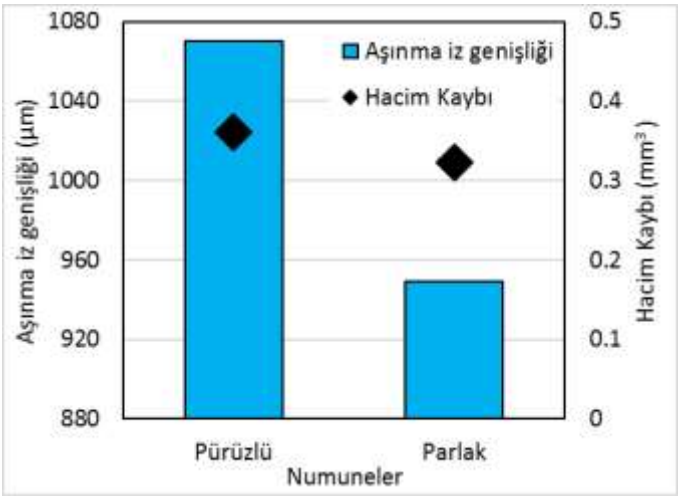
Şekil 5. Stereo mikroskop aşınma izleri genişlik ölçümleri a) Pürüzlü, b) Parlak

Aşınma profil incelenmesi, derinliklerin karşılaştırılması için gerekli olup, sadece iz genişlik incelemeleri yeterli olmamaktadır. Bu nedenle hacim kaybı hesaplamalarında da kullanılan Şekil 6'da verilen profilmetre grafiklerinden faydalanılmıştır. Grafiklerde pürüzlü yüzeylerden farklı noktalardan iki ölçüm ve parlak yüzeylerin aşınma bölgelerinden farklı iki noktadan iki ölçüm şeklinde alınan veriler bu grafikte mevcuttur.Grafik incelendiğinde pürüzlü yüzeyin daha derin noktalara sahip olması ve parlak yüzeydeki asimetri dikkat çekmektedir. Bu iki durumun sebebi olarak pürüzlü yüzeylerde aşınmanın etkisi ile çıkıntı olarak gözlemlenen bölgelerin kopması ve yerinde daha derin çukurlar bırakması olasıdır. Fakat parlatılmış numunede yağlamanın etkisi ile daha homojen bir aşınma izi gözlemlenebilmektedir. Ayrıca parlak numunede parçack kopma ve ayrılma durumları daha seyrek yaşandığı için derinleşen noktalar daha azdır.



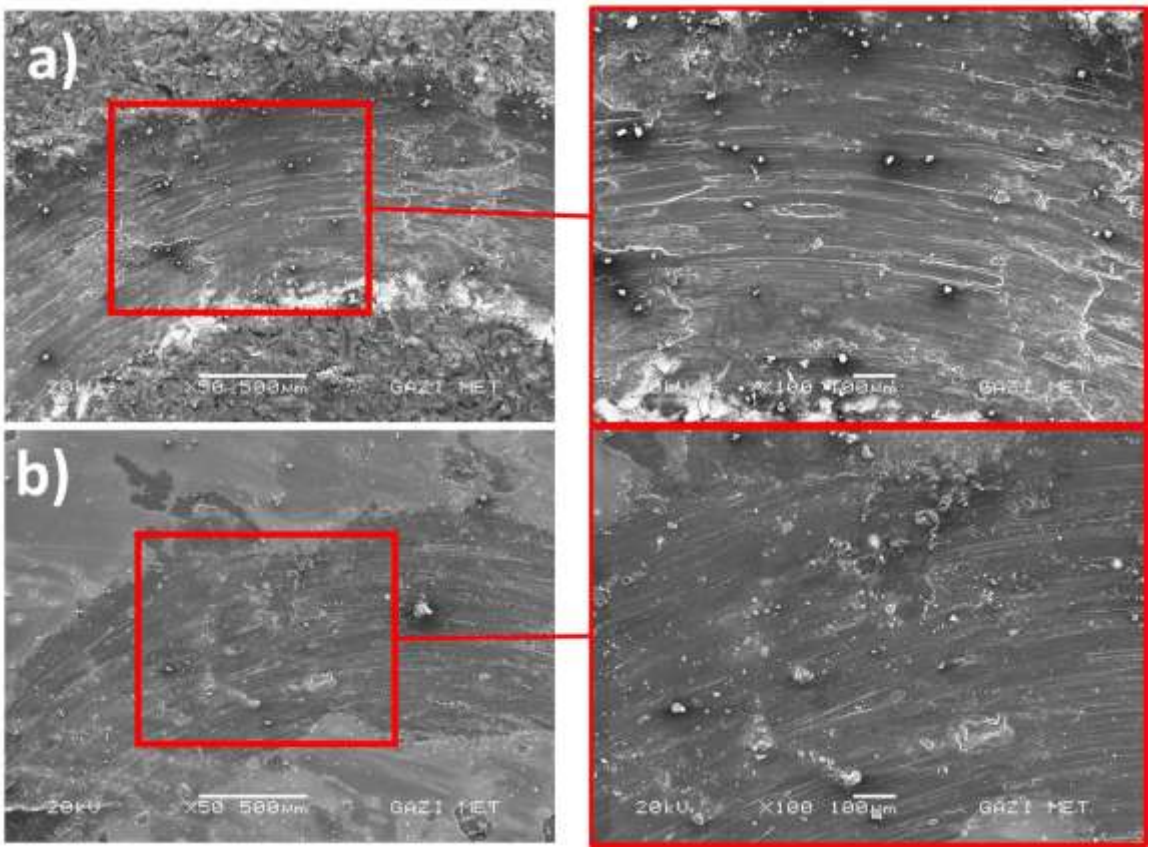
Şekil 6. Profilmetre grafikleri

Şekil 7, stereo mikroskop ile ölçülen iz genişliklerini (Şekil 5) ve profilmere ile ölçülen iz derinlik profillerinden (Şekil 6) elde edilerek hesaplanan hacim kayıplarını göstermektedir. Parlak numunede hem iz genişliği hem de derinlik profilinde bir azalma söz konusudur. Yağlama özelliğinin etkin olması ve kaplama tabakasının tutunabilirliğinin parlak numunede daha etkili olduğu söylenebilir.



Şekil 7. Toplam hacim kaybı ve iz genişlik değişimi grafiği

İki numunenin aşınma karakteristiğindeki fark Şekil 8'de verilen aşınma sonrası SEM görüntülerinde de gözlemlenebilir. Şekil 8.a pürüzlü numunenin aşınma izini ve Şekil 8.b ise parlak numunenin aşınma izini göstermektedir. Aşınmanın parlak numunede (Şekil 8.b) daha adheziv ve pürüzlü numunede (Şeikil 8.a) daha abrazif karakteristikte olduğu aşınma izleri ve aşınma sonrası yığıntılara bakılarak söylenebilir. Bu durum pürüzlü numune profillerindeki kopmaların abraziv aşınma sebebiyle olduğunun da bir kanıtı niteliğindedir.



Şekil 8. Aşınma sonrası SEM görüntüleri a) Pürüzlü, b) Parlak

SONUÇ

Gerçekleştirilen çalışma kapsamında parlatılmış ve kumlanmış WE43 Mg alaşım yüzeylerine aynı koşullarda RF-sçratma yöntemi kullanılarak MoO_3 kaplamalar biriktirilmiştir. Elde edilen kaplamalarda farklı yüzey pürüzlülüklerinin aşınma dayanımlarına etkileri incelenmiştir. Kaplanmış yüzeyler tüm numune yüzeyinde homojen bir şekilde elde edilebilmiiş ve kumlanmış numune yüzeyindeki farklılaşmalar kaplama sonrası da paralel büyüme neticesinde aynı şekilde gözlemlenmiştir. Parlak yüzey kaplama sonrası da düz bir kaplama tabakasına sahip olup bazı bölgelerde yüksek oksijen konsantarsyonu nedeniyle oluşan partiküller gözlemlenmiştir. Ortalama kaplama kalınlıkları pürüzlü numunede, parlatılmış numuneye göre yaklaşık iki kat daha kalın bir kaplama tabakası elde edilmiştir. Numuneler karşılaştırıldığında, parlatılmış numunenin başlangıç sürtünme katsayısı değerinin her iki numunenin ortalama sürtünme katsayısı değerlerinden 2,5 kat daha fazla olduğu tespit edilmiştir. Parlatılmış pürüzsüz yüzey üzerindeki kaplamaların aşınma performansı, daha ince bir kaplama tabakasına sahip olmasına rağmen pürüzlü yüzey üzerindeki kaplamaya

göre daha iyi aşınma performansı göstermiştir. Parlatılmış yüzeye uygulanan kaplamanın aşınmaya karşı dayanımı daha yüksek olarak tespit edilmiştir, sürtünme katsayısının yüksek olması da bu durumu desteklemiştir. Aşınmanın parlak numunede daha adheziv ve pürüzlü numunede daha abrazif karakteristikte olduğu düşünülmektedir.

TEŞEKKÜR

Gerçekleştirilen çalışma Manisa Celal Bayar Üniversitesi Bilimsel Araştırma Koordinasyon Birimi tarafından 2020-074 no'lu proje ile desteklenmiştir.

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A REVIEW ON THE AWARENESS AND CHALLENGES OF BUILDING INFORMATION MODELLING FOR POST CONSTRUCTION MANAGEMENT IN THE NIGERIAN CONSTRUCTION INDUSTRY

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Abstract

The application of Building Information Modelling (BIM) for post-construction management of a Building is still regarded as being at the infant stage compared to its application for planning, designing, and construction stage, which have been widely and adequately researched and utilized. The yardstick for measuring a successful project should spread across all the stages from planning, designing, construction, and post-construction management. Over the years, the challenges of effective and efficient management Buildings during the post-construction stage to achieve the expected gains and at the same time maintaining the standards has been a significant challenge. This paper majorly reviewed selected studies between 2011-2021 that have discussed the awareness of BIM for post-construction management and the challenges faced in the Nigerian construction industry, intending to establish the current awareness level, highlights significant challenges, and suggest ways to mitigate the challenges. The literature review analysis shows that awareness of BIM application for post-construction management is still critically low. With sets of challenges such as lack of BIM awareness and its benefit for post-construction management, cost of training, lack of government support, and fragmented nature of the industry. This study suggests rigorous awareness from the grassroots in the industry, government policy on BIM adoption, interoperation among the construction industry professionals from the planning stage to achieve the optimum goal expected during the life cycle.

Keywords: Construction industry, Awareness, BIM, challenges, post construction management.

INTRODUCTION

Generally, there is a constant rise in new technologies around the world. The adoption and application have shifted the paradigm from the conventional method of operation to a digital and more advanced approach of operation (Emmanuel et al., 2021). In this regard, the construction industry is not exempted. The World Economic Forum (2018) indicated that the construction industry accounts for 6% of the world GDP. Olanrewaju et al. (2018), on the same line, said the construction industry is projected as a significant driver of any economy, which account for about 5% increase in the world GDP growth as other sectors such as education, health, transportation critically rely on the construction industry for their operation. A report by to National Bureau of Statistics (2021), the construction industry contributed 10.17% to the nominal GDP in the first quarter of the year 2021. It indicates that the construction industry is a significant driver and contributor to developing any nation's economy. Even though the construction industry is a powerful driver of the economy, it still faces different productivity challenges arising from lack of adoption of new technologies such as Building Information Modelling (BIM) Acre and Wyckmans (2015), Internet of Things (IoT) Ghosh et al. (2020), Industry 4.0 (Newman et al., 2020) and Blockchain (Parn and Edwards, 2019). Adopting new technologies like BIM is an efficient way of ensuring information is well managed and other processes to enhance the performance of buildings life cycle (Arayici and Tah 2008; Aka et al., 2020; Olanrewaju 2021).

REVIEW OF RELATED LITERATURE

According to existing literature, application and adoption of BIM technology have the potential to eliminate budget overruns up to 40%, reduce the duration of construction by 7%, saves about 10% to 17% cost of operation, and brings nearly 50% reduction in greenhouse gas emissions during construction (Gao and Fischer, 2008; Boston Consulting Group, 2016; World Economic Forum, 2016). Therefore, the advantages of integrating BIM into the post-construction stage of operation and maintenance activities have drawn increased attention from both the industry and academia (Li et al., 2017). Studies such as (Ryal-Net and Kaduma, 2015; Edirisinghe et al., 2016, Aziz et al., 2016; Akerele and Etiene, 2016; Aka et al., 2020; Hamma-Adama 2020; Olanrewaju et al., 2021; Serdar et al., 2021) have established that adoption of BIM is low which requires more awareness and adoption among the stakeholders and professionals in the built environment industry.

According to Olanrewaju et al. (2021), The yardstick for measuring a successful project should spread across all the stages from planning, designing, construction, and post-construction management. Over the years, the challenges of effective and efficient management of buildings during post-construction activities to achieve the expected gains and maintain the standards have been a significant challenge. As opined by (Olanrewaju et al., 2020; Edirisinghe et al., 2016; Kincaid, 2004), in their study BIM has been widely adopted and researched for the planning, design, and construction stage compared to the post-construction location, which is still at an infant stage. In a related study by Serdar et al. (2021), in his research assessing barriers to implementation of BIM for facility management in New Zealand built environment, despite the numerous benefits of BIM for project life cycle, its adoption during the post-construction stage is still limited. Chioma et al. (2020) BIM during the post-construction phase of the building helps to improve facilities and asset performance.

However, the low adoption of BIM for facilities and asset management reduces the value derivable from the facilities in general. Lee (2012) established in his study that the life cycle cost of a facility could be seven times higher than the initial cost of investment used in developing the facility, and more than 80% of the total cost of ownership are expended

during operation and maintenance activities (Akcamete, 2010). Other studies (Jordani, 2010; Lewis et al., 2010; Arayici et al., 2012) show that 85% of the life cycle cost of a building occurs during the post-construction stage. According to BIM-Task-Group (2015), the biggest reward for BIM lies in the operational phase of the project life cycle. The literature has identified various potential benefits of using BIM for post-construction activities such as digital data storage, controlling and monitoring energy usage, clash detection, and preventive maintenance. (Hosseini et al., 2018; Gerrish et al., 2017; Durdyev et al., 2021). Rundell (2006) stated that BIM would allow for cost mitigation during the life cycle of the building and allow facility managers to enter the decision-making process at a stage that they can influence the planning, design, and construction process. In addition, BIM provides adequate knowledge of the facility's information that will assist the facility manager during the operation life of the facility (Aziz et al., 2016).

(Ikediashi and Uyanga, 2016) in their study with the aim of the present status of BIM adoption for FM roles in Nigeria to better understand the current state of use and effectiveness in FM service delivery, the result of the shows Firstly, the usage of BIM for FM applications had a substantial impact on lifecycle cost reduction and timely service delivery. BIM for FM technologies, particularly CAFM and CMMS, is the most effective asset management, energy and safety management, and inventory management. In a related study by (Olapade & Ekemode, 2018), out of the thirty-seven (37) FM that was assessed on the awareness and utilization of BIM for FM practices, only two (2) are currently adopting BIM for their operation, this shows a low level of adoption of BIM for FM in Lagos. The outcomes of this study provided industry stakeholders with information on the level of knowledge and use of BIM for FM practice in Nigeria, allowing them to gain insight into the potential integration of BIM with FM practices in emerging nations. Originality/value: The report is a ground-breaking study of BIM for facilities management awareness and implementation in an expanding property market like Nigeria. Considering the available literature, it is apparent that their urgent need to explore the adoption of BIM for post-construction activities has been lacking for better facility performance.

METHODOLOGY

This study adopts data collection by reviewing related literature sourced online from Elsevier, Google Scholar, Emerald, Research Gate, and Google search, where various studies were shown. The author extensively reviewed the related literature to determine the awareness and challenges of BIM for post-construction management. The search keywords were initially limited to the space of Nigeria "Adoption of BIM for post-construction management in Nigeria" "Adoption of BIM for facility management in Nigeria" after the search, the result shows that very scanty studies relating to Nigeria. The investigation was later re-adjusted to capture more expansive space without any country or area limitation. Search keywords "Adoption of BIM for post-construction management" Adoption of BIM for facility management" were used to get more related materials for this study.

DISCUSSION

The construction industry can increase and mitigate its productivity challenges by adopting new technologies such as BIM. The construction industry forms an integral part of developing any nation's economy as other sectors rely heavily on the construction industry to execute their daily or routine activities and operations. In terms of GDP, the construction industry is a significant contributor to a nation's economy globally, and the contributed GDP is projected to sour higher in recent years. Adoption of intelligent and digital technologies

can enhance the efficiency of any industrial operation, which will lead to an increase in productivity. The construction industry is being faced with challenges regarding productivity. If the construction industry globally can record just a 1% increase in productivity, it will realize a $1b. BIM on its whole has no single unanimously accepted definition as different experts and bodies coin their definition based on their view and use for its operation. BIM technology is designed to be utilized throughout the project life cycle from planning to design, construction, and post-construction. It is a crucial stage of any project life cycle as more than 80% of the total cost incurred on a project during its life cycle is expended at this stage. More so, the clients or occupants enjoy the benefits of their investment at this stage. Globally, BIM tends to have been more adopted for planning, design, construction. However, the most crucial phase has been deprived of the benefits of BIM, which, if adopted and implemented, will gradually and subsequently over time eliminate the traditional method of managing the post-construction activities, which have over time results in time wastage, energy waste, loss of return on investment, error in data entry due to manual inputting among others. In the context of Nigeria, the construction industry adoption and implementation of BIM is critically low due to different significant barriers such as lack of awareness, cost of software and training, industry resistance to adopting new technologies, and lack of legislative support. It has been reported that very few organizations are adopting BIM gradually in Nigeria. However, adoption is still limited to the planning, design, and construction, leaving post-construction behind. Aside from the listed barriers above, adoption of BIM for post-construction suffers other unique challenges such as lack of study in the area and lack of knowledge on the benefit of BIM for post-construction management. Studies regarding BIM for post-construction in the context of Nigeria are very scanty and almost negligible; the area requires more rigorous studies to be carried out.

CONCLUSION

This study further ascertains the existing literature that adoption of BIM is low globally in all phases of its applications. The developing countries are still struggling to adopt the BIM software compared to some developed countries such as China, the United Kingdom, and the United States, which applies to Nigeria where the knowledge of BIM for post-construction management is much lower as a result of lack of awareness and studies to look into the challenges battling this unique stage of the project. Hence, this study suggests rigorous awareness, especially among the concerned professionals and stakeholders, establishing BIM knowledge and training from the grassroots, usually from the tertiary institutions and related professional bodies, and enacting government policy encouraging or mandating its adoption. Lastly, more studies should be carried out to create an avenue to make general claims and assumptions.

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CONSTRUCTION ORGANISATIONAL PERFORMANCE AND THE AVAILABILITY OF ARTISANS AND TECHNICIANS AS IMPACTED BY TRANSPORTATION QUICK MONEY VENTURES IN NIGERIAN- A REVIEW.

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Abstract

All over the world, transportation has become a key for the socio-economic development of a nation. A robust transportation system indicates a stronger economy and progressive development. Generally, transportation affects every sector directly or indirectly. In Africa, motorcycle and tricycle transport has become some business opportunity for youth as quick money-making ventures, making up at least 33% of all transport modes in sub-Sahara Africa. Small and medium-sized construction firms face difficulties accessing competent artisans and technicians in some demographic regions of Nigeria. This is due to the quick money associated with motorcycle and tricycle transport ventures on the youth who would otherwise have been available to work as competent and efficient artisans and technicians. This study reviewed primarily literature selected within the last decade that had analysed the impact of transportation business as quick money-making ventures on the availability of artisans and technicians on the construction organisational performance of small and medium firms in Nigeria with the view of establishing the effects of the scarce craftsmen on organisational performance and proposed strategies that will improve youth preference to construction works which will, in turn, enhance organisational performance. The literature reviewed indicated a general skill gap within the construction industry in Nigeria. Also, non-availability and accessible artisans impact the organisational performance of the construction industry. The study suggested strategies to improve youth preference for artistry and technical works on construction sites. These strategies were; improved standard rate for site works, shortened duration for specialised and artistry skill acquisition through technical and vocational training, Government partnership with Master-Lerner informal apprenticeship system with remuneration, among others.

Keywords: Availability, Artisans and Technicians, Construction Organizational Performance, Transportation, Quick Money-Making Ventures.

INTRODUCTION

Construction project performances depend on many factors: funding strategy, stakeholders, technical know-how of the organisation, and available competent, effective, and accessible workforce. Artisans and Technicians form the bulky part of this workforce, and any gap within the workforce impacts the construction project performance, which affects the general organisational performance. One of those sections of the economy that creates a gap in the workforce supply chain in the Nigerian construction industry is the quick money-making ventures such as the Motor Cycle and Tricycle riding business by the youth from the transport sector.

Abayomi (2019) opined that 93.5% of motorcycle riders in the study area were artisans and technicians, while 62.5% of riders accepted that the motorcycle and tricycle business should be made legal Aranisola (2020), affecting the performance of the construction organisation. Therefore, low apprenticeship for craftsmen and artisans becomes the norm, impacting the availability of skilled and competent artisans and technicians, leading to poor artistry and low organisational performance of the construction sector (Kaoma & Muya, 2016). There is no doubt that one may find specific construction trades dominated by migrant craftsmen despite Nigeria's high unemployment index (Nathaniel & Chukwuemeka, 2018), contributing to delays, high cost of artistry, and low construction organisational performance. A visit to a typical auto-mechanic garage in Nigeria demonstrates that, unlike in the past, when a master auto-mechanic had between three and seven apprentices under his tutelage, one is lucky to find one or two learning the trade. Others will leave after three to six months to begin riding motorcycle taxis to earn money, while those who remain will not stay long enough to acquire the necessary skills to be proficient in the trade (Obiageli et al., 2021). Certain Nigerian legislators encourage this behaviour by donating motorcycles to youths in their districts under "Youth Empowerment." It is highly improbable that Nigeria will retain artisans and technicians in 20 to 30 years (Obiageli et al., 2021).

Method

This study reviewed primarily literature selected within the last decade that analysed the impact of quick money-making ventures on the availability of artisans and technicians on the construction organisational performance of small and medium firms in Nigeria to establish the effects of the scarce resource artisans and technicians on organisational performance. The reviewed literature was as follows:

Artisans and technicians are the primary employees in the construction industry in Nigeria, as the majority of work in the sector is performed manually (Karfe et al., 2021). Due to the labour-intensive nature of the building construction process, the availability of skilled artisans and technicians has a significant impact on the performance of the construction project. These skills are also critical to completing a building project (Asiyanbola, 2018). The availability of these craftsmen affects all performance metrics associated with a project, including time, cost, quality, and performance (Asiyanbola, 2018).

Therefore, competent and efficient artisans and technicians are needed for the high-quality job to be carried out on time and within budget for optimal organisational performance. Often, this is not the case because such quality artisans and technicians may not be readily available at all geographical locations of the country (Kareem et al., 2018). Hence, some highly needed competent artisans have to be sourced from elsewhere (Nambeh et al., 2021), leading to cost and time overrun. Effective management of cost and profitable production outcomes in the construction industry depends on reliable, qualified and capable artisans

(Bilau & Bamgbade, 2021), improving organisational performance. It takes time and a rigorous process to develop reliable, qualified and skilful artisans.

Additionally, because construction projects involve complex processes during the physical production of the project, a variety of factors may result from reworking and, most likely, maintenance during the structure's life cycle. The issue above constitutes a significant challenge when artisans and technicians must be sourced from a distance for rework or maintenance (Amusan et al., 2020).

Discussion of Result

In a tabular form below, different pieces of literature were presented:

S/No	Title	Author(s)	Findings	Remarks
1.	EFFECT OF SKILLS SHORTAGE ON SUSTAINABLE CONSTRUCTION	Ayodeji Oke, Clinton Aigbavboa, and Tshinakaho Khangale.	Project cost increases, project delays, quality reductions, increased frequency of on-site accidents, rework, and low labour productivity is all difficulties resulting from a skills shortage in the construction sector. Other repercussions include a deterioration in an organisation's competitiveness, a complete failure of the firm, an increase in the compensation of construction employees, and a drop in the quantity and size of construction workers.	Shortages in available skilled workers in the construction industry in Nigeria have been well established, and its effects on the project performance and organisational performance as well.
2.	AN ASSESSMENT OF EDUCATION AND TRAINING NEEDS OF SKILLED OPERATIVES WITHIN THE NIGERIAN CONSTRUCTION INDUSTRY	Ezekiel M. Awe, Paul Stephenson and Alan Griffith.	Skilled construction employees are migrating to more profitable markets. Some of the trained artisans who should be working on building projects have moved on to other ostensibly more profitable ventures, such as 'okada' commercial motorcycle transportation.	Even workforces already in the construction industry are migrating to other more profitable businesses such as the transport business, how much more of those that are yet to go into craftsmanship in the industry.

3	OCCUPATIONAL MOBILITY IN ENGINEERING PROFESSION (CRAFTSMAN AND ARTISAN) IN OYO STATE, NIGERIA.	Ilori, T.A., Dauda.,T.O., Raji.A.O, and Kilanko,. O. O	Motorcycle transportation is the cheapest, most accessible, and fastest way to avoid traffic congestion, even for short-distance travel, and the money earned may be done daily with minimal effort. Unfortunately, the increased use of motorcycles for business purposes has resulted in individuals leaving other occupations (particularly engineering).	The movement of artisans from the engineering sector to other sectors presume more earnings per short time. The rise in the Motorcycle taxi business has contributed more to this effect.
4.	ARTISANSHIP DISCONNECT: DECLINING TECHNICAL APPRENTICESHIP AND ARTISAN SERVICE AND THE IMPLICATIONS FOR NIGERIA'S FUTURE DEVELOPMENT	Onyenekenwa Cyprian Eneh	Barbering/hairdressing was the most popular trade, followed by garment production and service (17%), catering (16%), arts (fine and performing) (11%), electrical (11%), metal works (including aluminium fabrication) (8%), printing (6%), auto (mechanic, driving, electrical, panel beating and vulcanising) (5%), woodworks (2%), construction (masonry, tiling, roofing, plumbing, etcetera) (2%), and other (1%). (1 per cent).	Construction taking 2% in the study is alarming. It indicated how bad the construction industry performs in gaining more artisans through technical apprenticeship.
5	TECHNICAL AND VOCATIONAL SKILLS DEPLETION IN NIGERIA AND THE NEED FOR POLICY INTERVENTION	Oluwale, B.A., Jegede, O.O. and Olamade, O.O	The motorcycle taxi business has decreased the amount of craftsmanship in Nigeria's technical and vocational education and training (TVET). Many developing nations' development programs included technical and vocational education and training (TVET) a few decades ago. TVET became marginalised within the educational landscape due to the emphasis on primary education, and it was hampered by unfavourable attitudes	The impact of the transport quick-money venture on the available artisans for the construction industry is well documented.

			that portray TVET as a low-status, low-quality educational track. The above suggests that most persons in commercial motorcycling, especially teenagers, have some absorptive potential to be taught formally and informally for employment with added value in the informal sector. Furthermore, nearly all interviewees stated that they could read and write. The above demonstrates that many educated youngsters without office positions are working in commercial jobs that offer little value to the country. According to the survey, the majority of commercial motorcyclists were creative people who had been trained in numerous occupations.	
6	TECHNICAL AND SKILLED MANPOWER AS PREREQUISITE FOR ENHANCED PRODUCTIVITY IN THE CONSTRUCTION INDUSTRY	Aigbe Fortune, Ikpefan, Ochei Ailemen and Egolum, C.C	Low pay, high training costs, insufficient apprenticeship plan, a lack of interest in skill development, and other factors are all cited by respondents as contributing factors to the building industry's talent shortage in Nigeria. The above is in line with Awe et al. (2010), who discuss the lack of a well-organised apprentice scheme; and Odusami et al. (2010), who state that low wages and mass migration of skilled construction workers into more profitable ventures, such as transportation, are some of the reasons for the shortage of construction skills in Nigeria, both in terms of quality and quantity.	Transportation as a more profitably paying sector is one of the significant sectors hindering the availability of artisans in the Nigerian construction industry.
7	PROFESSIONALS' PREFERENCE FOR MIGRANT CRAFTSMEN IN LAGOS STATE	Adedeji Afolabi, Ijeoma Emeghe, Opeyemi Oyeyipo, and Raphael Ojelabi.	Craftsmanship plays a critical role in the building business. The desire for migrant artisans for professional building projects is increasing. Craftsmen	Transportation Business is again an option for the existing artisans in Nigeria

			either roam or enter the 'okada' or 'Napep' transportation industry, believing that migrant labourers have arrived to take their employment.	
8	A REVIEW OF THE SKILL SHORTAGE CHALLENGE IN THE CONSTRUCTION INDUSTRY IN SRI LANKA	Silva G A S K, Warnakulasuriya B N F, Arachchige B J H	By 2015, the three-wheeler population will approach one million, with over 500 000 engaged in passenger transport (Sunday Times, 2016). Accordingly, the population of three-wheelers climbed by 162 per cent between 2008 and 2015. The majority of three-wheeler drivers are estimated to be between 18 and 35. The above indicates that youths capable of contributing to industries prefer to work as Trishaw drivers rather than as craftsmen or technicians in this business.	In Nigeria and other countries both Africa and Asia, the construction industry suffers from the impact of the transport business.

Conclusion

The literature reviewed above indicated a general skill gap within the construction industry in Nigeria influenced by the transportation business, which attracts the youth because of the quick-money effect associated with the taxi business. Furthermore, the non-availability and accessible artisans impact the organisational performance of the construction industry, leading to cost and time overrun. An effective team determines project performance, and artisans are part of the team.

Strategies

The following strategies were suggested:

1. The improved standard rate for site works.
2. The duration for specialised and artistry skill acquisition through technical and vocational training should shorten.
3. Government should partner with Master-Lerner informal apprenticeship system with remuneration.
4. The current curriculum should be modified to allow for additional time in the workplace. It is planned that two years of the four-year curriculum be spent.
5. The national construction strategy, mainly unimplemented, should be updated to reflect the requisite skills to satisfy the vision's workforce requirements.
6. The government and other stakeholders should implement the national building policy.

7. In collaboration with all stakeholders, the government should create the Constitution Skills Council to assure the provision, accreditation, regulation, and funding of training programs to match the vision's building skills (Musa, N.A. *et al.*, 2012).

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EFFECT OF TIME PERFORMANCE ON EDUCATIONAL BUILDING PROJECTS IN NIGERIA

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Abstract

The Nigerian construction industry has been exposed and affected by various factors which has always led to time overruns during project delivery hence affecting performance in achieving set objectives. Other effects include lack of good quality end product and not meeting client's requirement. This study aims to assess the effect of time performance on educational building projects in Ondo State to minimise the adverse effects of poor time performance. The study adopted a quantitative research approach using a well-structured questionnaire distributed to the relevant professionals within the study area's physical planning unit of selected public tertiary institutions. Also, time-related data were collected to assess the time performance of the study area educational building projects. Percentile, t-test/regression, and Mean item score (MIS) were employed in analysing sourced data. The result showed a highly significant difference between the initial and final time duration of the projects. Thus, most of the building project executed by the various public tertiary institutions in Ondo State, from the year 2000 to date, has been influenced by its performance through time. The study also revealed that an increase in final cost and delay in project delivery time are the most common effects. The study therefore recommends that more adequate attention should be given to the financial capabilities of various government-owned tertiary institutions before embarking on the construction project. Clients should evaluate the quality performance of selected contractors before engagement.

Keywords: Educational Buildings, Construction industry, Performance, Projects, Time Duration.

1. Introduction

Time is an essential component of measuring systems used to sequence events and compare durations. Check events intervals and used to quantify the motions of objects. It is also described as a period considered a resource under one's control and sufficient to accomplish something. (Brainy, 2009) further, define time as the duration, considered independently of any system of measurement or part of duration, whether past, present, or future; a point or portion of duration; as, the time was, or has been; the time is or will be. Realistic construction time is now increasingly important because it serves as a crucial benchmark for assessing the performance of a project. Time overrun over the last three decades has been an issue in the construction industry; it has been reported that there had been 50% to 80% delays on 1627 world bank sponsored projects between 1974 and 1988, together with an average of 23.2% time overrun on UK government construction projects from 1993 to 1994 (Chan and Kumaraswamy, 2002). The goal of every construction stakeholder is to achieve the completion of the project within the scheduled time and budget. However, due to the nature of the industry (complexity, fragmented nature, being driven by schedule and resource-driven; it has faced severe challenges like low productivity, low quality, delay, and cost overrun. Controlling time overrun on construction projects is crucial in achieving timely completion of projects; therefore, the industry faces the significant risk of achieving timely completion within estimated time and cost (Aftan, Ismail, Noor, and Tarmizi, 2013). Delay in project execution is a significant problem in Nigerian educational building projects. These occur both in small and large projects. Virtually all the projects executed over the years in the country have faced a delay in delivery (Oseghale and Ata, 2008).

Time is a factor that is essential in all activities that have to be carried out; in the contract document, a specific time phase is given for delivery of the project, and if the time is being exceeded, more money is often spent, which could lead to increase in the final cost of the project and also wastage and under-utilisation of workforce and resources. Also, delay can lead to reduced profit for builders and abandonment of building projects by the client. Thus, this study aims to examine the effects of time performance of educational building projects in Nigeria to enhance the performance of these projects as to value for money for project stakeholders.

2. Literature Review

The construction time has been acknowledged by construction researchers and industry practitioners over the past three decades as one of the most critical performance criteria of many successful building projects (Chan and Chan, 2003). Realistic construction time is now increasingly important because it often serves as a crucial benchmark for assessing the performance of a project. Time overrun over the last three decades has been an issue in the construction industry; it has been reported that there had been 50% to 80% delays on 1627 world bank sponsored projects between 1974 and 1988, together with an average of 23.2% time overrun on UK government construction projects from 1993 to 1994 (Chan & Kumaraswamy, 2002). The construction time of a building is usually specified prior to construction. There are no 'hard-and-fast' rules for predicting the construction duration of projects. Construction time is usually deduced from the client's brief or derived by the construction planner from available project information such as design drawings, bill of quantities, method statements, specifications, bar chart programs (Nkado, 1994). The completion periods are often calculated based on the planner's own previous experience on similar projects. Quite often, there is a difference between contract cost, and actual overrun

could range from simple errors in original quality takeoff to changes in quantities of work or inclusion of new items of work. Whatever the reasons, it entails an increase in the size of a project in terms of volume that may increase construction time. Lack of ability to prevent time overruns or control construction time causes many Educational Building Projects to fail. Educational building projects are considered one of Nigeria's most critical construction projects. It is well known that most construction projects in Nigeria educational buildings are exposed to time or cost, or both. This phenomenon may affect the progress of educational building projects in Nigeria.

Education Building projects in Nigeria are critical issues that badly affect project delivery. These may lose the goal of building a more significant number of Educational projects to reduce the concentration of the people in the class that can improve the overall Education system in Nigeria. Time Performance generally results from different factors that occur at various phases of the project life cycle. These factors include an increase in project scope, design error, lack of planning, mistakes in soil investigation, difficulty getting work permits from the Government, bureaucracy in the bidding/tendering method.

2.1 Time Performance of Educational Building Projects

Construction projects are undertaken to create a unique facility, product or service within the specified scope, quality, and time (Chitkara, 2004). Some Educational Building projects encounter time overrun or poor artistry upon completion. Time performance, poor quality and workforce of Educational Building projects require an in-depth investigation to improve the outputs of the construction industry. It is not common to see Educational Building projects failing to achieve their mission of creating facilities within its specified time and performance. Hardly few projects get completed on time and within budget since construction projects are exposed to uncertain environments because of such factors as complexity; the presence of various interest groups such as the project owners, end-users, consultants, contractors, financiers, materials, equipment, project funding, climatic environment, the economic and political environment and statutory regulations. The successful execution of educational building projects, keeping them within the estimated cost and the prescribed schedules, primarily depends on the existence of an efficient construction sector capable of sustained growth and development in order to cope with the requirements of social and economic development and to utilise the latest technology in planning and execution. Time is a significant consideration throughout the project's life cycle and can be regarded as one of the most critical parameters of a project and the driving force of project success.

2.2 Relationship Between Initial and Final Time of an Educational Building Projects

(a) Initial Time: The initial construction project time can be regarded as the actual time a construction project is originally supposed to span. The initial project duration of such a construction project is primarily derived using computer software known as the Microsoft office project. It calculated the actual project duration based on a task while considering the length of time reasonable enough for each task. It also decides which task should come first and which one should come next. It also highlights the construction tasks that can be skipped in place of some other ones. In the end, the total duration of such a project is calculated and derived.

(b) Final Time: After the construction, duration has been derived using the Microsoft office project, work is set out. Some tasks might have actually taken more than the budgeted time and thus increased the construction project's duration. Therefore, the total time taken

for the construction project to reach final completion is referred to as the final time of the construction project. Many factors affect the time taken to complete a construction project, including the availability of materials, the availability of construction materials, delay in transportation of materials to the site. All these sum up at the end of the day to either hasten or delay the completion time of the construction project. The time frame between the initial and final times is known as the span of the construction process. Observation revealed that particular project management problems still exist (Jha &Iyer, 2005). There are many means of control in the delivery of projects: activity planning, labour, materials, plant and equipment planning, as well as supervision of work in the form of allocation of daily tasks, specification of work direction and guidance, the designing of temporary works, and the sequencing of activities. These require firm control in order to deliver the project as designed. Various stakeholders on a project, namely clients, contractors, and designers, and external influences contribute to the delivery of a project.

Success concerning delivery of a building project could be referred to as the completion of a building within a specified time, budget limits, quality standards, and void of accidents. These indicate the management control level on the project and a measure of competence. Observation revealed that particular project management problems still exist (Jha & Iyer, 2005: 314). There are many means of control in the delivery of projects: activity planning, labour, materials, and plant and equipment planning, as well as supervision of work in the form of allocation of daily tasks, specification of work direction and guidance, the designing of temporary works, and the sequencing of activities. These require firm control in order to deliver the project as designed. Various stakeholders on a project, namely clients, contractors, and designers, and external influences contribute to the delivery of a project.

2.3 Effects of Time on the Performance of Educational Building Projects

There are quite a large number of influencing factors that could affect the time performance of Educational Building projects. However, some of the studies have prioritised these factors in order of their importance concerning time overruns in the completion of construction projects (Odeh and Battaineh, 2002; Majid and McCaffer, 1998; Chan and Kumaraswamy, 1997). Design related issues such as changes in drawings, incomplete specifications and change orders have a very damaging effect on project completion times and invariably lead to cost escalations. These are issues that can be controlled with proper design process management and timely decision making. These are a well-known fact that decisions made early in project life have the most profound effect on the project's objectives of delivering a safe, quality project within the time and budget allocated (Ahmed, Sampan, Pragnya, and Dharma 2003). According to Aibinu and Jagboro (2002), in their study of the growing problem of construction projects in the country. Utilising a questionnaire survey of 61 construction projects, the authors identified and assessed the impact of time overruns on the delivery of construction projects. Time overruns were found to be frequent effects of acceleration of site activities coupled with improved owner's project management procedures and the inclusion of an appropriate contingency allowance in the pre-contract estimate were recommended to minimise the adverse effect of construction time overruns in Nigeria. Hence, To the professionals, time overrun implies the inability to deliver value for money and could tarnish the reputations and result in loss of confidence reposed in them by the client. However, the following have also been identified as having a significant effect on-time performance of Educational Building projects.

(a) Increase in Final Cost of Projects: These will slow down the project progress due to low productivity of site activities and increase wages, change order, faulty and incomplete

specification leads to cost escalation; it can also cause a lower payout and reduce an early return on the client's or project owner's investment.

(b) Abandonment of Building Projects: Time overruns could bring about project abandonment, drop-in building activities, bad reputation, and inability to secure project finance or secure it at higher costs due to added risks. Moreover, tying down client capitals due to non-completion of the projects.

(c) Reduced Profits: Time overruns may imply loss of profit for non-completion and defamation that could jeopardise the contractor's chances of winning further projects. And also, wastage and under-utilisation of workforce and resources.

(d) Arbitration and Litigations: Disputes between parties involved could lead to loss of productivity and revenue, Lawsuits between owners and contractors, and contract termination. According to Mbachu and Nkado (2004), the global construction industry is plagued with cost overruns in project delivery. This development also has brought about; Loss of clients' confidence in consultants. Added investment risks, and inability to deliver value to clients, contractor paying liquidated damages for late completion, and Owners and contractors are treated as eager participants in bribes, illegal financing and other forms of corruption and waste.

3. Methodology

A quantitative research approach was employed for the study with the use of a well-structured questionnaires. For the study's objective to be met, equal representation was adopted. Hence, fifty-four (54) questionnaires were administered to relevant registered professionals in the Works and Services/ Physical Planning Unit selected public tertiary Institutions. They include Architects, Quantity Surveyors, Structural Engineers, Builders, Electrical and Mechanical Engineers, Town Planner) in Nigeria. Only 45 returned questionnaires were analysed, representing 83.3% of the distributed questionnaires. Tables were employed in this study for data presentations. The collected data were analysed using descriptive and inference statistics such as percentile, variance, means, spearman correlation, and regression.

4. Data Analysis and Discussion

Table 1a Time Performance of Educational Building Project

Time Data Analysis

S/N	Nature of Projects	Initial time	Final time	variance	percentage
1	1No3-storey office block for Rector	24	72	48	200
2	1No2-storey office blocks for the Registry	20	48	28	140
3	1No2-storey office blocks for the Bursary	20	54	34	17
4	Quarters for senior Mgt. Staff-Rectors lodge	14	32	18	127
5	Quarters for senior Mgt. Staff-DP apartment	14	26	12	86
6	Quarters for senior Mgt. Staff-Reg. apartment	14	30	16	114
7	Quarters for senior Mgt. Staff-Bursar’s apartment	14	28	14	100
8	Quarters for senior Mgt. Staff-Rector guest house	10	13	3	30
9	Quarters for senior Mgt. staff- guest house 3RM	10	10	0	0
10	Quarters for senior mgt. staff prototype building	8	8	0	0
11	Artisans’ village (Adm. Block/workshop)	24	63	39	163
12	Central workshop complex	16	26	10	63

13 millennium 3 in 1 lecture theatre	16	47	31	194
14 Construction of Equip maint. Centre	15	156	141	940
15 Animal Quarantine block	12	12	0	0
16 Digital Research & Resource centre	41	68	27	66
17 Post graduate students Hostel	32	48	16	50
18 Construction of SAAT building Ext.	12	24	12	100
19 Construction of office blocks	28	58	30	107
20 Office blocks	42	63	21	50
21 Lecture theatre	48	72	24	50
22 Lecture theatre	52	104	52	100
23 Blocks of classroom	24	52	28	11
24 Entrepreneurship centre	52	52	0	0
25 Auditorium	52	106	54	104
26 Administrative building	48	92	44	92
27 Office blocks	14	30	16	114
28 Lecture Theatre	48	144	96	200
29 Hostel	48	48	0	0
30 Resource centre	52	96	44	85
31 Health centre	52	96	44	85
32 Lecture Theatre	52	96	44	85
33 Construction of Toilet	52	96	44	85
34 Construction of Generator house	52	144	92	177
35 Blocks of classroom	48	106	58	121
36 Cafeteria	48	106	58	121
37 Construction of classroom blocks	48	106	58	121
AVERAGE				118

Table 1a shows a significant difference between the initial and final time duration on some of the projects executed from 2015 to date by the Government-owned higher institutions in Nigeria. These imply that almost all the project executed has variance between the initial and final time of the project, which is an indicator that there is an overrun in the final time of the project. The Mean for the initial and final time is 33.27 while the t-value is 6.65 with a degree frequency of 35 at a P-value of .000, which indicates a 99% Significant difference between the initial time duration final time duration of the projects. Also, it reveals a significant relationship between the initial time duration and the final time duration at a 0.5 level of significance, which implies that adequate attention should be given to the performance of educational building projects as regards to time stipulated for completion of the projects.

Table 1b Effects of Time on the Performance of Educational Building Projects

EFFECTS	MEAN	RANK
Increase in final cost	4.00	1
Delay in project delivery time	3.96	2
Project abandonment	3.49	3
Reduced project	3.22	4
Arbitration and litigation	3.07	5

Table 1b shows the five significant effects of time on the performance of educational building projects based on values and ranking. Increase in final cost which ranked high with 4.00, followed by delay in delivering of project 3.96; the third-ranked significant effect are Project abandonment with 3.49, other are; Reduced profit 3.22 and Arbitration and Litigation 3.07. These were related to the causes relating to the effects. Most of the building projects carried out by the various institutions faced time overrun. Some of the Government-owned high institutions across the various states face delays in delivering the projects.

5. Conclusion and Recommendation

The study assessed the effects of time performance on educational building projects in some selected tertiary institutions in Nigeria. Also, the relationship between the initial and final time duration of some selected projects was determined. The findings revealed a significant difference between the initial and final time duration of every building project, including the Educational Building projects. It also revealed that delays in performing inspections and testing affect the increase in the final cost. In contrast, difficulties in financing projects by the contractors have a significant effect on the delay in project delivery time. Hence, most of the building project that the various Government has executed owned high institutions in Nigeria, from 2015 to date, has been affected by its performance through time. This study can be used to lessen the delays in the construction industry by dealing with the main influencing factors and reducing their effects. Thus, the study recommends that adequate financial attentions and funding should be given to both state and federal government institutions across Nigeria. Moreover, there should be an internally generating fund within the institutions to fund some of these projects by the school management.

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ENGINEERING EFFECTS OF SUGAR FOR MONITORING THE HYDRATION OF HEAT ON CEMENTITIOUS MATERIAL TO FORM A CRYSTALLINE STRUCTURE

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Abstract

Cement is a material with adhesive and cohesive properties which allows bonding of materials to form a dense structure. The engineering effects of cementitious material was assessed using sugar as a retarding additive. Numerous mixtures have been established to display delaying action in the performance of cement concrete. The proportion of sugar incorporating cement was used in producing different concrete cubes. The use of sugar in cement decreases the heat discharged during hydration process. The investigation shows that, a dense concrete with a sugar additive of 1 to 3 percent improved higher compressive strength than the control concrete after 14 days of curing. The experimental delay in the setting time of cement was realized by adding up to 3 percent of sugar content on the basis of the requirements by the British Standard. The outcome of the laboratory investigations shows that, the use of an ordinary sugar as a retarding additive of the cement, decelerates the setting time of cement adhesive by a period of 20 minutes. Therefore, sugar rises the compressive strength of concrete when used in lesser quantity, but also contraries its engineering effects when used in bigger quantity. The H_2O absorption of cement constituents when preserved with sugar is not usually affected by the quantity of the said additive. It can be recommended that, future studies on other additives incorporating cementitious materials are needed for the benefit of the present and future researchers.

Keywords: hydration of heat; retarding additives, cementitious material, hydration process, crystalline structure.

Highlight

- Sugar as a retarding additive was described
- Cement hydration responses are critically reviewed.
- Pozzolanic materials in cement concrete are discussed
- Compressive strength and setting time of concrete incorporated sugar are investigated.
- Transformation behavior of concrete incorporated sugar additive was observed graphically.

1. Introduction

Additives can modify the material and decrease the construction cost of the project. The operational use of additives rest on the usage of suitable techniques of handling cementitious materials. Additives are generally provided in readymade (liquid form) and are applied to the material as improvers [1]. Cement is a material with adhesive and cohesive properties which allows bonding of materials to form a dense structure. An additive is a constituent incorporated engineering materials to improve the geotechnical properties of the material to be used.

Therefore all additives are classified as water reducing additives, retarding additives, accelerating additives, superplasticizers additives, and corrosion impeding additives [2]. All supplementary variabilities of additives fall into the domain classification functions comprising oxidization reserve, shrinkage, bonding, reduction in alkali-silica reactivity, workability improvement, moisture prevention, and physical coloring of the material [3]. However, additives are used for inserting microscopic air voids into the reinforced or mass concrete so as to allow absorption of excess carbon emissions [4]. There are limited studies on the use sugar as an additive incorporated cementitious material. This investigation would be useful for the present and upcoming researchers.

2. Cement hydration response

Cement hydration responses are extremely exothermal and increase heat quickly especially during settings and initial toughening, and slowly drops and finally improves as hydration decelerates [5]. Therefore, 50 percent of the hydration of heat is usually produced in the first three days and 80 percent in the first seven days [6]. Furthermore, the extensive temperature disparities documented in the first limited hours may root reduction, producing the cracking detected in some engineering construction projects comprising huge quantities of concrete structure [7]. Almost all the cement components subsidize in the production of hydration of heat. Meanwhile, the cement hydration of heat rest on the percentage of its components, mostly in measuring its configuration, as well as the percentage of any admixture [8].

According to Tantri et al [2], the utilization of pozzolanic materials in cement concrete decreases the heat discharged during hydration process. Though the reaction of the material (pozzolanic lime) also produces heat, and the quantity of clinker substituted in the mixed cement concrete. Therefore, initial age of pozzolanic performance can be projected by quantifying hydration of heat, which might also be utilized to generate its influence in the improvement of low hydration of heat incorporated cement concrete [9]. Figure 1 depicts hydration of heat for a period up to 14 hours for cement concrete casted with various additives [10]. Ever since the batching by weight process was similar for all cases, then engineering effects of each of the constituents on hydration of heat produced ordinary cement incorporated adhesive and cohesive products.

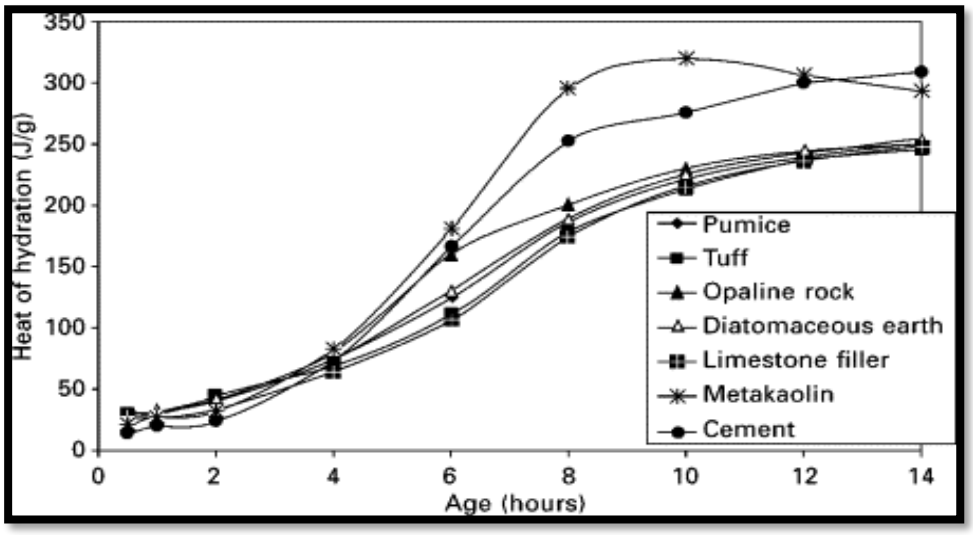

Fig. 1. Hydration of heat for some admixtures based on the age [10].

Similarly, for a long period of time, the pozzolanic action of the material was contributory in the improvement of hydration of heat [11]. Viana [12] has reported the engineering effect of hydration of heat in figure 2 which represents the discrepancy in hydration of heat in blended cements standardized to the ordinary cement for the first 14 ages (hours) of the experimental incorporated several additives..

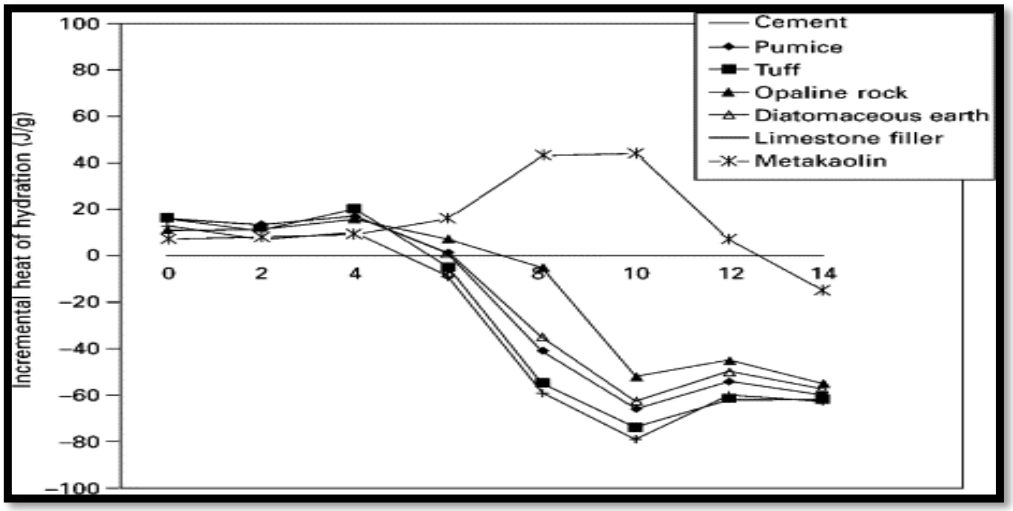

Fig. 2. Discrepancy of heat hydration for blended cement standardized to ordinary cement [12].

3. Materials and methods

Cement samples from Northern Sokoto Cement Company (Nigeria limited), were collected for the purpose of conducting this research. Materials such as sugar, cement, water, aggregates were used. Similarly, equipment such as British Standard Sieves, vicat apparatus, weighing balance, shovel, pycnometer, compressive strength testing machine, etc were all used for conducting laboratory experiments. Compressive testing machines are general testing machines specifically designed to assess static compressive strength features of the constituents. However, the laboratory experiments such as sieve analysis, compressive

strength, water absorption (initial and final setting time), and specific gravity were all conducted in the laboratory for the aim and objectives of the research to be achieved.

4. Results and discussions

4.1 Test on compressive strength

The compressive strength properties of concrete incorporated sugar were investigated on the basis of curing days. The collection of sugar in concrete can disturb the compressive strength of concrete. The higher quantity of sugar can result into lesser compressive strength of the concrete. The details result of the compressive strength of sugar incorporated sugar were tabulated in Table 1.

Table 1
Compressive strength properties of concrete incorporated sugar.

Sample	Sugar content (%)	Average Compressive Strength (N/mm^2)		
		7 days	14 days	28 days
S1	0.0	17.58	23.08	34.10
S2	0.1	17.46	21.30	29.00
S3	0.2	11.25	16.81	27.93
S4	0.4	9.17	15.21	27.30
S5	0.6	6.73	12.88	25.18
S6	0.8	3.56	10.25	23.64
S7	1.0	0.00	3.78	11.35

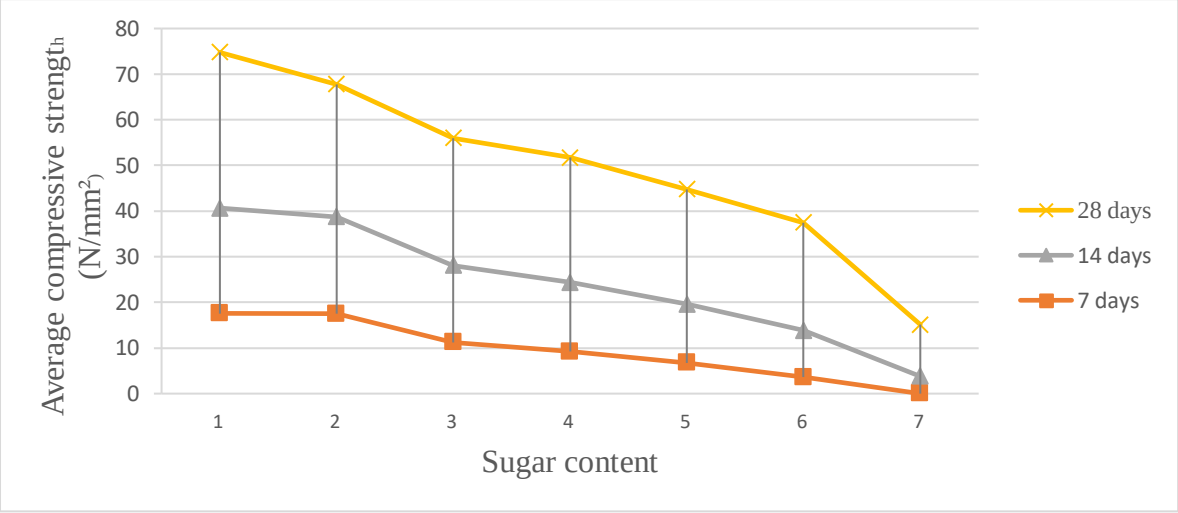

Fig. 3 Compressive strength of concrete incorporated sugar.

4.2 Test on initial and final setting time

Sugar content of 0.10 per cent by weight of cement can delay both the initial and final setting time by 0.33 hours (20 minutes) and 0.10 hours (6 minutes) respectively. No contrary influence on cement paste has been detected at this level of sugar application. The delay in setting time on concrete at this content of sugar might be beneficial in avoiding cold joints and in decreasing premature setting of cement in hot weather concreting. Nevertheless, sugar beyond 0.10 per cent by weight of cement enhanced the setting time of cement (refer to Table 2 and Figure 4).

Table 2
Influence of sugar on the initial and final setting time of concrete.

Sample	Sugar content (%)	Initial setting time (Hrs.)	Final setting time (Hrs.)
S1	0.0	1.95	5.15
S2	0.1	2.28	5.25
S3	0.2	1.75	3.13
S4	0.4	1.36	1.66
S5	0.6	1.34	1.63
S6	0.8	0.19	0.34
S7	1.0	0.14	0.19

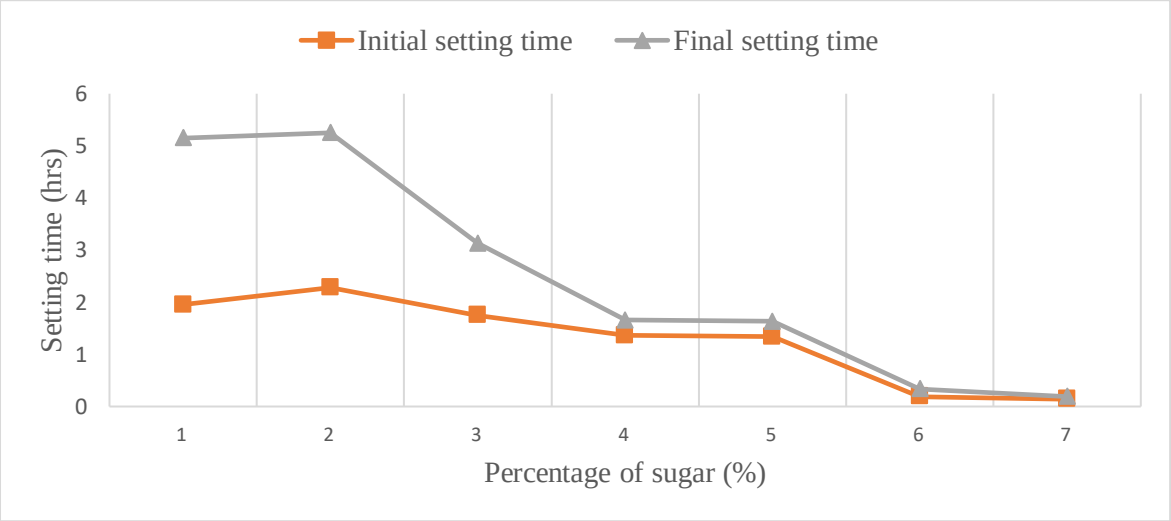

Fig. 4 Transformation behavior of concrete incorporated sugar content.

4.3 Test on water absorption

The specific gravity of the fine and coarse aggregates are 2.66 and 2.67 respectively. The quantity of moisture concrete cubes absorption after fully submerged in water for 24 hours were demonstrated in Table 3.

Table 3
Water absorption for concrete cubes (dry and wet methods)

Sample	Sugar content (%)	Dry weight (W_d) of concrete cubes (kg)	Wet weight (W_w) of concrete cubes (kg)	Water absorption (%)	Concrete quality as per CEB rating
S1	0.0	2.39	2.44	2.09	Good
S2	0.1	2.38	2.48	4.20	Average
S3	0.2	2.38	2.46	3.36	Average
S4	0.4	2.39	2.47	3.34	Average
S5	0.6	2.38	2.46	3.36	Average
S6	0.8	2.37	2.45	3.37	Average
S7	1.0	2.39	2.47	3.34	Average

5. Conclusion and recommendations

Several researches have revealed that the usage of mineral additives on cementitious materials such as cement have substantial quantity of transforming influence on the compositions of the cementitious material. These additives can distress the setting time of cement adhesive and cohesive properties. The water absorption of concrete and concrete

compressive strength have been examined using additives. The outcomes from the experiments specifies that the usage of sugar as a retarder additive at a ratio of the proportion by mass of 0.10 per cent of the cement used decelerates the setting time of cement paste by 20 minutes. Although, sugar upsurges the compressive strength of concrete when used in lesser quantity, but also contraries its influence when used in higher quantity. Hence; the water absorption of concrete cubes incorporated sugar as a partial replacement material is not affected at all.

The following recommendations should be taken into special considerations:

i. Disproportionate usage of sugar in advanced quantity should be evaded as it contraries its delay properties.
ii. The proportion should be precisely measured when using sugar as a partial replacement material due to the delicate effect of extreme use of quantity of sugar required.
iii. Sugar content of 0.10 percent by weight of cement can develop concrete compressive strength by 3.23 percent at 28 days and delay initial setting time by 0.33 hours. Therefore, so precise quantitative techniques should be used.
iv. The suspension in setting of concrete at 7 days incorporated sugar could be beneficial in averting and decreasing premature setting of cement in hot climate concreting.
v. It is suggested that lesser quantity of sugar should be used for supreme extended period before setting development commences.
vi. The usage of sugar additive on concrete is suggested where there is requirement for conveying of concrete to a far distance location.

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AN ASSESSMENT OF THE FACTORS INFLUENCING TIME PERFORMANCE OF EDUCATIONAL BUILDING PROJECTS IN ONDO STATE, NIGERIA

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Abstract

The performance of educational buildings and the construction industry in terms of meeting objectives or goals had been invariably affected by risks, thereby making it vulnerable to what has been broadly categorised as time overruns. This study aims to assess the factors influencing time performance of educational building projects in Ondo State to minimise the adverse effects of poor time performance. The research approach adopted by this study is a quantitative research approach using well-structured questionnaires systematically designed to meet practical, proven information necessary for the study analysis. Percentile and Mean item scores (MIS) were employed in analysing sourced data. Fifty-nine (59) potential factors were identified that influence the time performance of educational building projects. The result showed that the most influential factors affecting the time performance of educational building projects are client-based factors like Financial difficulties and external factors like underestimating time of completion through ineffective planning and scheduling by contractors. Therefore, it was concluded that financial difficulty is the primary factor influencing educational building projects' time performance. Hence, the study recommends that adequate attention should be given to the client's financial capabilities before embarking on construction and that clients should evaluate the quality performance of selected contractors before engagement.

Keywords: Educational Buildings, Construction industry, Performance, Projects, Time Duration

1. Introduction

Time is a factor that is essential in all activities that have to be carried out; in the contract document, a specific time phase is given for delivery of the project, and if the time is being exceeded, more money is often spent, which could lead to increase in the final cost of the project and also wastage and under-utilisation of workforce and resources. Also, delay can

lead to reduced profit for builders and abandonment of building projects by the client. Thus, this study aims to examine the effects of time performance of educational building projects in Nigeria to enhance the performance of these projects as to value for money for project stakeholders. A building project that has been practically completed is not enough to ascertain its success. For a project to be termed 'successful', several essential factors must be considered, including project completion within a specified budget and time. Cost and time have been essential measures of building success because of the enormous priority placed on them by clients and their financial implications when they are exceeded (Hatush and Skitmore, 1997; Ogunsemi, 2015). Considering the poor economic background of Nigeria, where poor funding of projects in higher institutions is typical (Ajayi and Ekundayo, 2006; Udu and Nkwede, 2014), there is the need to assess the factors influencing the time performance of educational buildings.

Unfortunately, construction in the country has been characterised by poor performance (Mbachu and Olaoye, 1999; Ogunsemi, 2015; Ogunsemi and Jagboro, 2006), and educational buildings are not spared from this unhealthy situation. In most cases, projects executed within higher institutions are either left uncompleted or completed above budget, behind schedule, and below standard (Ewa, 2013; Oyedele, 2013; Edukugho, 2013). These poor project deliveries in these institutions tend to affect the quality of the delivered education. It has been established that buildings are crucial in delivering quality education. Their function goes beyond just serving the present generation (Abdul-Lateef *et al.*, 2011; Aghimien *et al.*, 2016). Thus, achieving successful educational buildings should be a priority for those responsible for the delivery of education within the country, and construction professionals in general

2. Literature Review

2.1 Factors Influencing Time Performance of Educational Building Projects

Many research has proven that improper planning at the initial stages of a project manifests throughout the project and causes delay at the various stages of the construction project. Ahmed et al. (2003) studied two kinds of causes for delay in construction projects:(1) External causes; and (2) Internal causes. External delays are easier to examine as compared to internal delays. Internal delays are difficult to examine because of the number of people involved in a project. Internal causes of delay include the causes arising from four parties involved in the project. These parties include the owner, designers, contractors, and consultants. Other delays, which do not arise from these four parties, are based on external causes, such as the government, materials suppliers, or the weather. Several researchers have categorised the factors that affect the Time Performance of Building projects in the following categories:

(a) Project Related Factors: The factors that are related to project responsibility are; Procurement system; Type of construction methodology; Complexity of project; Health and Safety resources, and Locations. Success of construction projects depends mainly on the performance. Many previous types of research had been studied the performance of construction projects. Dissanayaka and Kumaraswamy (1999) remarked that one of the principal reasons for the construction industry's poor performance had been attributed to the inappropriateness of the chosen procurement system. Reichelt and Lyneis (1999) remarked on three important structures underlying the dynamics of project performance: the work accomplishment structure, feedback effects on productivity and work quality, and effects from upstream phases to downstream phases. Thomas (2002) identified the main performance criteria of construction projects as financial stability, the progress of

work, the standard of quality, health and safety, resources, relationship with clients, relationship with consultants, management capabilities, claim and contractual disputes, relationship with subcontractors, reputation and amount of subcontracting. Chan and Kumaraswamy (2002) stated that construction time is increasingly important because it often serves as a crucial benchmarking for assessing the performance of a project and the efficiency of the project organisation. It is obtained by Navon (2005) that a control system is an essential element to identify factors affecting construction project effort. For each project goal, one or more Project Performance Indicators (PPI) are needed. Pheng and Chuan (2006) obtained that human factors played an essential role in determining the performance of a project. Ugwu and Haupt (2007) remarked that both early contractor involvement (ECI) and early supplier involvement (ESI) would minimise constructability-related performance problems, including costs associated with delays, claims, wastages and rework. Ling *et al*. (2007) obtained that the essential practices relating to scope management are controlling the quality of the contract document, quality of response to perceived variations and extent of changes to the contract. It was recommended that foreign firms adopt some of the project management practices highlighted to help them achieve better project performance in China.

(b) Client's Related Factors: The factors that related to client responsibility are; Lack of contract and construction knowledge; Slowness in making decisions; Lack of coordination with contractors; Contract modification (replacement and addition of new work to the project and change in specifications); Change the order by the client during construction; Late in revising and approving design contract document. Moreover, financial problems delayed payments, financial difficulties, and economic problems.

(c) Contractors Related Factors: The factors that related to the contractor's responsibility are; Ineffective planning and scheduling of projects; Improper construction methods implemented; Delay in subcontractors work; Delay in delivery of materials to the site; Shortage of materials on-site; Construction mistakes, and defective work; Poor skills and experience of labour; Shortage of site labour; Low productivity of labour; Difficulties in financing projects; Coordination problems with other; Lack of subcontractors skills; Lack of site contractor's staff; Poor site management; and Equipment's and Tool shortage on-site; Equipment breakdown; Shortage of equipment; Low level of equipment operator's; Low productivity and efficiency of equipment; Shortage of labour; Unqualified workforce; Low productivity level of labour; Personal conflict among labour. Shortage of labour is of deep concern to the Educational building projects. The labour shortage will slow down the project progress due to the low productivity of site activities. If the low number of labours is being occupied for a project, it might affect the project schedule, Ahmed, Sampan, Pragnya, and Dharma (2003). To overcome the labour shortage challenges, increasing wages can be a significant step for employers, as wage increases are necessary to attract new workers. In order to discount this delay factor, the government should take proactive measures to train and encourage more people to join the construction industry labour force. Benefits such as increasing wages, better work environment, holidays, and bonuses to be provided to the labourers will be good incentives which will enhance the time performance in delivering; Also, Shortage of construction materials in the market; Changes in materials type and specifications during construction; Delay in material delivery; and Late procurement of materials. These are when materials are not received on or before the delivery date indicated in the contract or order. These will slow down the construction, making contractors wait until the delivery materials for construction because there will be little or no work that can be carried out without it. Agencies are responsible for holding suppliers to delivery schedules and for

contracting suppliers for an initial resolution of delivery problems. This procedure must be used only when a supplier fails to respond satisfactorily to a follow-up. During periods of high development where the level of construction activity is unusually high in a particular region, some construction may be shortages. Here the level of construction activity is unusually high in a particular region, and there may be shortages of some construction materials. Sometimes the local market may not supply the complete demand of these construction materials; hence a need may arise. Suppose this was not anticipated in the original cost estimate. In that case, the delay might occur, and the prices of these elements may increase, leading to delay and cost overrun for the project.

(d) Consultants Related Factors

The factors related to consultant's responsibility are; Delay in performing inspection and testing; Delay in approving major changes in scope of work; Poor communication and coordination; Inadequate consultant experience; Incomplete documents; Delay and slow supervision in making decisions; Slowness in giving instructions.

(e) Design Related Factors

The factors related to Design responsibility are; Delay in producing design documents; Insufficient data collection and survey before design; Unclear and inadequate detail design document; Design errors, and Design variables (change in the initial drawing design).

External Factors

The External related factors are;

(i) **Financial Difficulties:** According to the results, most parties agreed that financial difficulties are crucial time factors influencing construction projects. Project cost is one of the most crucial success criteria and is of great concern to those involved. Abdul-Rahman, Wang, Takim, and Wong (2011) suggested some possible solutions in reducing the financial-related time overruns such as structuring the market, not being competent in accepting the contract, choosing a good paymaster, and applying payment bond with bank and client. All these planning, problem-solving, and communication skills methods can be considered in managing the financial difficulties facing construction projects and preventing unnecessary time overrun caused by related financial factors. Time overrun can delay work progress due to the late payments from the clients because there is inadequate cash flow to support construction expenses, especially for the contractors who had instability financial resources. Therefore, a well-managed cash flow will improve the project's cash flow and subsequently improve the timely performance.

(ii) **Change in Government Regulations and Laws:** This refers to government policies such as restrictions on the importation of building materials, interest rates, and inflation which may negatively affect construction over-all time. The legal environment facing organisations are becoming more complex and directly affecting works. It has become increasingly difficult for projects to take action without encountering laws and regulations. The construction operates within planning and environment regulations, codes of practice, safety regulations, licensing, insurances and taxation laws. These laws, codes and regulations are generally well defined, making it possible to predict their impact on construction time performance of building projects with reasonable accuracy. Martin and Thomas 2004, observed that changes to industrial, safety taxation and environmental laws are not uncommon, and

problems may arise when the law changes during the life of a project. The legislation affects clients project activities directly through factors such as safety, planning laws, and building regulations as it influences the contractual relationships within projects. Oladapo and Olotuah (2007) pointed to the attention of stakeholders that the legislation in Nigeria is based on the British model and has been an ex-colony and that the standard form of building contract issued by the Joint Contract Tribunal (JCT) in Britain was modified for use in Nigeria. The onus is on the managers of construction works to get acquainted with planning regulations and land use Acts legislation which are parts of the legal environment.

(iii) **Underestimation of Time of Completion:** Some of the reasons for underestimating completion time are inadequate time estimation and planning. Often, people underestimate the amount of time needed to complete a project, especially when the project manager is not familiar with the task to be carried out. According to Ahmed (2003), unexpected events or unscheduled high priority work may not be considered. Therefore, it is recommended that at the beginning of any project, understanding the project outcome, reviewing the project/task given in detail and listing down the entire component task in full will help with the time planning for the project.

(iv) **Climate Change on Construction Project Planning:** According to Clark, Priest, and Crichton; (2002), .in the pre-planning stage, flood risk affects the suitability of locations for planning construction projects and the conditions under which development is permitted. In the planning and design stages, flood risk affects the design of the built facility. Under planning conditions, specific drainage, building elevations, structural designs and specialised materials may be necessitated. All these will lead to delay and affect the overall duration of the project. The physical environment within which a construction project is sited may considerably impact its development as physical influences affect construction projects. The geographical location, ground conditions, and weather patterns are the most common examples of physical influences. They are unpredicted, and management actions have not been able to prevent their occurrence. Nevertheless, Martin and Thomas (2004) opined that managers of construction works would take significant physical effects when planning the management strategies to avoid extremes that can take advantage of available resources.

(v) **Non-Performance of Subcontractors:** The importance of subcontractors cannot be overemphasised in construction projects. According to Walker and Wilkie (2006), subcontractor services, in general, can form the more significant part of any construction project, with many contractors opting to subcontract the whole of the works apart from the general or project management services. Non-performance of subcontractors was reiterated as a significant obstacle to effective project control. However, attention was drawn to the fact that this is often not necessarily the subcontractor's fault but may be due to a lack of effective management by the main contractor. For example, not properly communicating the project's objective to a subcontractor or not being able to identify non-performance early enough. A good working relationship between the contractor and subcontractor is considered essential in project time performance.

(vi) **Risks and Uncertainties:** Risks arise from uncertainty and are generally interpreted as factors that adversely affect the achievement of the project objectives (Smith 2002). Cook and Williams (2004) noted that construction is undeniably a risky business for many reasons, one of which includes the poor record of time certainty. The risk on a project is well documented and has been covered by numerous studies

and not the aim of this section. This section brings to light the emergent themes concerning practitioners' perception of how risks and uncertainties inhibit their projects' ability to affect time performance.

(vii) **Socio-Cultural Factors:** The socio-cultural/political dimensions of the environment consist of customs, lifestyles, and values that characterise a society (Williams 2007). While population demographics, rising Educational levels, norms and values, language and attitudes towards social responsibilities are socio-political/cultural factors (Engobo 2009). These factors have organisations that operate within the society. Engobo (2009) study revealed that Delta State communities shared most of the aforementioned factors as it comprises mainly Igbo (Anioma people), Urhobo, Isoko, Ijaw, and Itsekiri. Moreover, in managing construction projects with the communities, "pidgin English" is an adulterated English language used for oral communication among the illiterate workforce. Also, the incessant kidnapping of expatriate construction workers, militancy and the demand by the groups of unemployed youths for illegal fees are popularly called "settlement", which usually causes delays ranging from days to weeks on construction. Thus, Williams 2002, and Engobo 2009, signalled that managers and supervisors of construction work within this region need to adopt appropriate leadership styles to manage projects to avoid unnecessary time and cost overruns.

(viii) **Weather Conditions:** This refers to the influence of weather and natural occurrences, which negatively impact the speed of construction. These factors include; natural hazard/fire, flood, local adverse weather – rainfall and temperature differences; negative light; and noise.

(ix) **Poor Communication Between the Parties:** Since there are many parties involved in a project, communication between the parties is very crucial for the success of the project. Proper effective communication between the parties must be established during the planning stage. Any problem with communication can lead to severe misunderstanding and, therefore, affect the time performance of the building project. Hence, to accelerate communication and decision-making among all parties, appropriate communication systems linking all project team members and weekly meetings record should be developed throughout the project's life cycle. It is highly recommended that a computerised communication system be used to enhance communication between the parties.

(x) **The complexity of Works:** Project complexity can be defined as a single or combination of factors that affect the standard response or actions taken to achieve the project outcomes (Wood and Ashton 2009). Construction projects may sometimes involve some form of complexity and may not be straightforward; this can sometimes present a challenge for effective project time performance. According to the CIOB (2008), Complex construction projects in the UK are likely to be finished more than six months late due to poor time control. Interface issues in projects, such as the interface of different project stages, phases, or trades, is often the main cause of complexity during construction projects. Complex projects are often not adequately understood before embarking on them, and this only increases the negative effect of complexity during project time overrun, CIOB (2008). Breaking down projects into manageable chunks would naturally aid the time overrun of complex projects. Adequate planning is essential in the complexity of works, but enough time is often not available for planning due to the haste of going to the site after tender.

(xi) **Changes:** With the help of a written notice, the owner may, without any notice to the sureties, unilaterally make any change, at any time in the work within the general scope of the contract, including but not limited to changes:

- In the drawings, designs or specifications,
- In the method, manner or sequence of contractor's work,
- In customer or owner furnished facilities, equipment(s), materials, services or site(s),
- Directing acceleration or de-acceleration in the performance of the work,
- Modifying the contract schedule or the contract milestones.

If at any time contractor believes that acts or omissions of owner constitute a change to the work not covered by a change notice, the contractor shall within ten (10) calendar days of discovery of such act or omission, submit a written change notice request, explaining in detail the basis for the request. The owner may issue a change notice or deny the request in writing. If any change under this clause directly or indirectly, an increase or decrease in the time required for the performance of any part of the work, whether or not changed by any order, an equitable adjustment shall be made, and the contract will be modified according to Ahmed, Azhar, Kappagantula, and Gollapudi (2003). The clause recognises that changes in the work or changes in the method or manner of performance may require changes in the schedule and schedule milestones. These could further necessitate revisions in activity durations, sequence of work items, or interrelationships of various tasks. These changes may directly impact the schedule. A change in the method requires a greater or lesser period of performance, or its effects may be subtler, as where the change merely rearranges priorities. In addition to a time extension, the contract's clause provides compensation for any time overrun resulting from a contract change by allowing an equitable adjustment for the increased time of the performance of the work caused by the change. Ahmed, Azhar, Kappagantula, and Gollapudi (2003).

3. Methodology

A quantitative research approach was employed for the study using a well-structured questionnaire. For the study's objective to be met, equal representation was adopted. Hence, fifty-four (54) questionnaires were administered to relevant registered professionals in the Works and Services/ Physical Planning Unit selected public tertiary Institutions. They include Architects, Quantity Surveyors, Structural Engineers, Builders, Electrical and Mechanical Engineers, Town Planner) in Nigeria. Only 45 returned questionnaires were analysed, representing 83.3% of the distributed questionnaires. Tables were employed in this study for data presentations. The collected data were analysed using descriptive and inference statistics such as percentile, variance and mean item score (MIS).

4. Data Analysis and Discussion

Table 1 Factors Influencing/Affecting Time Performance of Educational Buildings.

Factors	Mean	Rank
Project Related Factors		
Procurement system	3.49	1
Complexity of project	3.13	2
Type of construction methodology	3.07	3
Health and safety resources	2.87	4

Location	2.62	5
Client Related Factors		
Financial difficulties	3.98	1
Late in revising and approving design documents	3.51	2
Change order by client during construction	3.16	3
Contract modification	3.11	4
Lack of contract/construction knowledge	3.11	4
Slowness in decision making process	3.02	6
Lack coordination with contractors	2.98	7
Contractor Related Factors		
Difficulties in financing project	4.00	1
Ineffective planning and scheduling of project	3.93	2
Poor site management	3.73	3
Improper construction methods implemented	3.58	4
Construction mistakes and defective work	3.33	5
Shortage of material on site during construction	3.33	5
Shortage of equipment and tools on site	3.33	5
Late procurement of materials	3.27	8
Equipment breakdown	3.27	8
Poor skills and experience of labour	2.22	10
Delay in material delivery to site	3.18	11
Changes in materials type and specification during construction	3.16	12
Unavailability of standard equipments	3.11	13
Unavailability of special equipments	3.09	14
Personal conflict among labour	3.07	15
Wastages	3.07	15
Good relationship among the various parties to the contract	3.02	17
Rework	3.02	17
Lack of coordination with other parties	3.00	19
Management capabilities	3.00	19
Claims	3.00	19
Unavailability of construction materials in the market	2.96	22
Low production level of labour	2.91	23
Shortage of labour	2.28	24
Consultant Related Factors		
Delay in performing inspection and testing	3.49	1
Poor communication and coordination	3.31	2
Delay and slow supervision in making decisions	3.31	2
Delay in approving major changes in the scope of work	3.29	4
Incomplete documents	3.16	5
Slowness in giving instructions	3.02	6
Inadequate experience of consultants	3.00	7
Design Related Factors		
Delay in producing design documents	3.64	1
Design variables	3.49	2
Insufficient data collection and survey before design	3.36	3
Design errors	3.27	4
External Factors		

Financial difficulties	4.38	1
Underestimation of time of completion	4.09	2
Change in government regulations and laws	3.80	3
Climate change on construction projects planning	3.14	4
Changes	3.04	5
Complexity of works	3.02	6
Weather condition	3.00	7
Risks and uncertainties	2.98	8
Non-performance of subcontractors	2.89	9
Socio-cultural conditions	2.80	10
Poor communication between the parties	2.71	11

Table 1 assesses the factors influencing the time performance of educational building projects in Ondo State. Factors were analysed using mean item score (MIS); a total of fifty-nine (59) factors responsible for time performance of Educational building projects were identified, analysed and ranked. It revealed financial difficulties both from the client's, contractor's and external were identified as the significant factor affecting time performance of educational building projects with mean of 3.98, 4.38, and 4.00 respectively, client's inability to finance the project, lack of sources of funds by the client's and also difficulties in financing project by the contractor as many contractors do not have sound financial backing, they only depend on the client for advance payment and monthly progress payments. According to the results, most parties agreed that financial difficulties are crucial time factors influencing construction projects. Project cost is one of the most crucial success criteria and is a serious concern to those involved. Abdul-Rahman, Wang, Takim, and Wong (2011) suggested some possible solutions in reducing the financial-related time overruns such as structuring the market, not being competent in accepting the contract, choosing a good paymaster, and applying payment bond with bank and client.

5. Conclusion

The study assessed the various factors influencing time performance on educational building projects in some selected tertiary institutions in Ondo State, Nigeria. The result of the analysis showed fifty-nine (59) factors that influence the time performance of educational buildings. Financial difficulties by the Client's and Difficulties in financing project by the contractors is the primary factor influencing time performance of educational building projects, and others include; Underestimation of time of completion, Ineffective planning and scheduling by contractor's, Changes in government regulations and laws, Poor site management, Improper construction methods implemented, Late in revising and approving the design, Design variables and Procurement methods. This study can be used to lessen the delays in the construction industry by dealing with the main influencing factors and reducing their effects. Thus, the study recommends that adequate financial attention and funding be given to both state and federal government institutions across Nigeria. Moreover, there should be an internally generating fund within the institutions to fund some of these projects by the school management.

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A REVIEW OF THE INFLUENCE OF STAFFING METHODS ON CONSTRUCTION LABOUR PRODUCTIVITY IN ABUJA

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Abstract

The construction industry (CI) contributes significantly to the overall GDP of every nation. Thus, for any country to grow its economy, adequate attention must be given to the growth of the CI. Without effective labour productivity, no construction company can grow. Over the years, the poor productivity of the construction labour force has been a thing of concern both at the construction and maintenance stages. The goals or objectives of any construction project may not be met unless labour productivity is not enhanced. There have been several studies regarding the labour productivity of skilled and non-skilled labour and professionals on construction sites. These extant studies focused on the issue of labour productivity and the factors affecting such. This paper reviewed selected CI-related labour productivity studies published from 2011 to 2021. The focused themes of this critical review include the effect of contract staffing on labour productivity, factors affecting the productivity of artisans, and the contribution of labour productivity to the growth of construction firms. According to the literature review findings, the mode of staffing has a significant impact on labour productivity in the construction industry. The factors influencing on-site workers' productivity vary by location, and the standards of each construction company determine its workers' retention ability. The more attention paid to workers' welfare, the more likely the construction industry's productivity will improve. This review suggests that choosing the suitable staffing method required for each unique form of contract is necessary to achieve appreciable labour productivity on construction sites. Other recommendations of this study include determining the most appropriate staffing methods, various factors affecting different staffing methods, and the effect of the choices made.

Keywords: Staffing Methods, Construction Industry, Influence, Labour Productivity.

INTRODUCTION

The construction industry (CI) is an important sector of the national economy in all countries around the world (Rabia *et al*., 2020). Also, the contribution of the CI to social growth and long-term national development is widely acknowledged in the open literature. However, the construction industry (CI), by nature, faces a plethora of special problems. Many topical issues with implications for the CI have, so far, been given ignored. Those issues that have received little attention were discussed primarily in the context of developed countries. It is commonly assumed that these issues do not concern developing countries. However, for the benefit of developing countries, it is also important to address these contextually. One of the

most significant challenges of the CI in Nigeria is low productivity (Badmus *et al.*, 2020). Productivity is one of the essential aspects of the CI, which helps its survival and growth (Frefer, 2017).

One of the major factors on which the productivity of construction workers can be anchored is the quality of staff, which is often determined by the mode and process of staffing adopted. This study discusses how staffing methods and other factors influence the productivity of construction workers. It also discusses how labour productivity impacts the economic growth of construction firms and nations. The findings of this study will go a long way in helping construction firms to standardize their staffing methods and improve their contribution to national socio-economic development.

METHODS

One of the decisions to be made in collecting science domain information such as those reported in this report is to determine the research sources to be used. Scopus, the ISI web of Science (WoS) and Google Scholar are the three main academic repositories. Likewise, several key journals publishing houses have their databases including those of ASCE Library, Elsevier- Science Direct, Emerald, Springer Link, Taylor & Francis, Wiley Online Library, and a host of others available for Journal Search and Retrieval (JSR). Nevertheless, the core collection database of WoS has been adopted for the JSR of this study because WoS is the most comprehensive and contains the most relevant and influential journals in its database. Another important reason for selecting the WoS is its scientific robustness. Using the search string "labour productivity" and "staffing of construction workers", a comprehensive literature search, retrieval and indexing was performed on the WoS core collection. The results of the search were narrowed to include only journal articles from 2011 to 2021, which were written in English as published journal articles would have undergone a rigorous peer review process and most researchers eventually republish their conference papers and dissertation in academic journals. Journal papers are sources of information with greater quality and credibility, thereby graded as "certified information". Also, they are more detailed than other sources of information. In addition, we excluded areas of labour productivity and staffing that are not relevant to the CI from the search results.

LITERATURE REVIEW

This section addresses some of the issues of the CI and analyses them from the perspective of the developing countries. It starts with the effect of staffing methods on labour productivity which, paradoxically, is usually viewed as a need for only developing countries, despite the fact that it is also relevant to developed countries. It then proceeds to discuss factors affecting the productivity of artisans or craftsmen, and the contribution of labour productivity to the growth of construction industry and in return the nation’s economy. We highlighted the relevance of the topic in each case. We further discussed each of these issues in the penultimate section and highlighted issues, which researchers should investigate further.

Effects of staffing methods on labour productivity

Construction work is generally labour-intensive. The construction labour force can be categorized into: technical, administrative, professional, and managerial staff, and workers. The characteristics of construction demand have a direct impact on labour staffing. Staffing is a part of the employee recruitment, evaluation, and selection process that takes place within an organization to fill a job opening. The human resources department of the CI typically handles staffing tasks (Pahos & Galanaki, 2019). This function is occasionally outsourced.

While small institutions handle staffing, one case at a time, bigger organizations may have multiple staffing processes in the year. CIs use the staffing process to gain temporary or permanent employees (Choi et al., 2021; Pahos & Galanaki, 2019). Implementing an effective staffing process is positively related to the performance of CIs (Delery & Roumpi, 2017). It also provides CIs with employees that fit into the thir existing social framework, reducing training expenses (Abdelrahman *et al*, 2021). The above impacts are only possible if the staffing process is properly handled. However, the staffing process can be mismanaged. Sometimes, managers of the staffing process place familiarity above competence and technical know-how. A faulty staffing process produces weak, incompetent, and scrupulous workers, resulting in low productivity, unnecessary rework, and avoidable time-cost overrun.

Factors affecting the productivity of construction workers on site

The productivity of construction workers is of great interest to the construction practitioners because it affects project cost and time. Anu and Sudhakumar (2014) studied the factors affecting the productivity of construction workers in India. The top five factors identified include: (1) timely availability of materials at the worksite, (2) delayed material delivery by the supplier, (3) strikes called by political parties or haters, (4) frequent revisions of drawings/design, resulting in additional work/rework and (5) timely availability of drawings at the worksite. According to Opara, (2019) Using a field survey, Opara (2019) investigated different variables affecting labour productivity in Imo and Abia states of Nigeria. The findings of this study showed that, about 65% of the factors affecting labour productivity were administrative issues while 35% were technological problems. Among these factors, motivation of workers was ranked the highest while political factors were ranked the least. In Zimbabwe, Thabani and Wellington (2016) identified the following as the most significant factors influencing construction labour productivity: late and/or non-payment of wages and salaries, suitability and/or adequacy of capital, non-payment to suppliers, availability of experienced labour as well as education and training. Kazaz *et al* (2016) summarized the nature of these factors as organizational, economical, physical, and socio-Physiological. Kazaz and colleagues also identified that organizational factors group economical, and physical factors highly important, but socio-psychological factors were less important.

The contribution of labour productivity to the growth of construction industry and in return, the nation's economy

David and Sunday (2015) viewed productivity as a complex phenomenon at all levels (individual, organized private, or public sector) of human endeavor, particularly in construction project delivery. Productivity is a fundamental concept in assessing the economic performance of CIs (Salehi *et al*., 2013). Key factors that lead to productivity improvement in construction project delivery include project planning, productivity measurement, avoidance of construction site congestion, motivation of workforce and good communication etc.

Labour productivity affects both CIs and national economies. For the CIs, increased productivity of construction workers brings higher profit and opportunity for more investment. It can also result in higher remuneration and improved working conditions. Furthermore, a highly productive construction industry drives the **economic growth of nations.**

DISCUSSION

According to the current review, it is worthy of note that no country, developing or developed, can make any significant progress economically without the import of the CI. It is

observed that the construction industry plays an indelible role in the growth and development of every nation. For the CI to grow there is an obvious role of the human and material resources management for which this study only considered the human resource aspect. The study was able to bring to light the great role of labour productivity in the growth of any construction firms, which consequently affects the growth of the industry at large. When discussing the labour productivity of onsite construction workers such as craftsmen and professionals, it is important to consider the influencing factors and the methods of employing them.

Numerous factors were identified from this study. The factors influencing on-site workers' productivity vary from one location to another. However, the welfare of construction workers and condition of the site are of paramount to the productivity of construction workers. There are various types of contractual arrangements, just as there are various methods for engaging the labour force required to carry out the work, which range from permanent or contract staff to labour only, and casual staff. The nature and length of contracts strongly influence the staffing method employed by construction firms. Finally, the standards of each construction company determine its workers' retention ability.

CONCLUSION

The CI in Nigeria is facing major challenges. Those which are highlighted and considered in this study relate to the low productivity of workers in the industry. The mode of staffing can have significant impacts on labour productivity in the CI. This review suggests that choosing the suitable staffing method required for each unique form of contract is necessary to achieve appreciable labour productivity on construction sites. The more attention paid to workers' welfare; the more likely it is that productivity in the CI will improve. It is necessary for more work to be done on the issues of labour productivity, staffing of construction workers, and various issues that relate to the CI in developing countries. The overarching issue of CI development should include all issues.

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BIOMECHANICAL EVALUATION OF BONE TYPE AND DENTAL IMPLANT MACRO DESIGN EFFECT ON STRESS AND STRAIN DISTRIBUTION: 3D FE ANALYSIS

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Abstract

Many complications in dentistry fields can't be analysed clinically that's why researchers use FEA which is a powerful tool to study and predict the biomechanical behavior of the bone. The objective of this study was to evaluate the effect of bone type and the macro design of the implant on stress and strain distribution surrounding the bone tissue using finite element analysis. A threaded and smooth implant were created using Catia v5 with same dimensions, and bone type III with a cortical layer of 1.5 mm. These models were exported to Abaqus v6.16 for the analysis, an axial occlusal load of 200 N was applied at the top of the crown. The results showed that the maximum von Mises stress is confined in the cervical margin of cortical bone around the neck, and differences in the magnitude of strain and stress between the normal and weak bone. High von Mises stress in cancellous bone was observed in the case of normal bone with the threaded implant compared to the smooth implant. The stress in cancellous bone is concentrated at the apical region in all cases, this should explain the load transfer from implant to cancellous bone. Maximum principal strains were observed in weak cancellous bone compared to normal bone. Based on Wolff's law, the results indicate that maximum strain generated in the normal bone can lead to bone remodeling, and in the case of weak bone higher strains can lead to bone damage. The thread design play a role in stress/strain distribution, it can produce more stress and strain which stimulate bone remodeling responses.

Keywords: implant, stress, FEA, design, osseointegration, bone

SPATIAL AND VERTICAL DISTRIBUTION OF HEAVY METALS AND RADIONUCLIDES CONTAMINATION IN LOBÉ RIVER SEDIMENTS, SOUTH-WEST CAMEROON

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Abstract

The spatial and vertical distribution of heavy metals (Fe, Ni, Cr, Co, Sc and V) and radionuclides (Th and U) and the sediment characteristics of Lobé River, south-west Cameroon were assessed in this study to define the current environmental status of sediments. Core sediments were analysed using Robinson-Köln's pipetting standard method to measure grain size and weight loss-on-ignition method for organic matter. Metals and radionuclides concentration were determined using ICP–MS techniques. To understand the vertical distribution, tree strata were defined (surface, middle and bottom). In these sediments, low levels (2.87 %) of organic matter were recorded and sand is the main constituent (82.06 %). The average concentration (mg/kg) of selected elements are in the following order: Fe (23112.84) > Cr (447.62) > Ni (109.93) > V (47.04) > Th (23.70) > Co (7.74) > Sc (5.10) > U (2.78). The highest concentration of almost all the selected chemical elements were recorded in the middle, followed by surface and bottom level, respectively. A moderate to severe pollution of Cr, Ni and Th in all strata was revealed by Enrichment Factor (EF > 1.5), Geo-accumulation Index (I-géo > 0) and Contamination Factor (CF > 1). The pollution load index (PLI) reflect that surface and middle sediments (1.08 and 1.14, respectively) are polluted, while bottom sediments (0.88) are unpolluted. Pearson correlation, cluster analysis and component principal analysis show that heavy metals (Fe, Sc, V, Cr, Ni and Co) have common anthropogenic sources where grain size (sand, silt and clay) are associated, while radionuclides (Th and U) have a natural source. The presence of human activities such as household wastes, intensive agriculture and the result of the processing of the industries products could be possible sources of the anthropogenic pollution, threatening for the environmental related issues in the region.

Keywords: heavy metals and radionuclides, distributions and contamination, Lobé River.

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Özet

İçinde yaşadığımız devrin en önemli özelliği olan teknoloji ve teknolojik hayat insan yaşamının bir parçası haline gelmiştir. Gelişen teknoloji, yaşamsal ürün ve yeni yapı ve boyutların oluşmasına olanak sağlamaktadır. Bu yapılardan biri olan sosyal medya; temelde kullanıcıların sözel ve görsel paylaşımlarına izin veren, düşüncelerini, etkinliklerini, ilgi alanlarını, farklı yaşam olaylarını başkalarıyla paylaştığı, yalnızca bilgi paylaşmak için değil, aynı zamanda yerel, ulusal veya küresel düzeydeki gelişmeleri de takip ederek bilgi aldıkları ve değişiklikleri anlık olarak izledikleri, boş zamanlarında eğlenceli vakit geçirebildikleri bir araç olarak insanlığa sunulmuştur (Solmaz, Tekin, Herzem ve Demir, 2013: 24). Sosyal medya, her ne kadar sanal bir içerik olsa da bireysel ihtiyaçların anında tatminini sağlaması açısından gerçekçi bir görünüm vermektedir. Bu gerçekçi görünümde birey, sosyal ağın çevre, arkadaş ve yaşam alanı gibi geniş sanal ortamında isteklerini gerçekleştirebileceğini hissetmektedir. Ancak birey bu ihtiyaçlarını sanal dünyada karşıladığında, gerçek yaşantısındaki ihtiyaçlarını karşılamada daha sanal ve gerçeklikten daha kopuk hale gelmektedir. Yeni gerçeklik algısında bireyler birbirini etkilemekte; ne hissetmeleri, nasıl algılamaları ve başkaları tarafından kabul edilmek için hangi kimliği benimsemeleri gerektiğini belirlemek durumunda bırakılmaktadırlar (Karagülle ve Çaycı, 2014: 7). Özellikle öğrencilerin eğitim ortamında sık sık hayal kırıklığı yaşaması nedeniyle anlamsızlık ve öfke duygularının arttığı görülmektedir. Bu durumda sosyal ağlar ise rahat, erişilebilir, çevre ile etkileşim ihtiyacına son derece duyarlı, düşünceleri paylaşmaya uygun bir ortam yaratmaktadır. Sosyal medyanın yarattığı sanallıkla dolu bu gerçeklik duygusu, bireyi toplumdan uzaklaştırmakta ve bireyin mutlu olabileceğini düşündüğü bir hayata dönüştürmektedir. Ergenler, aslında bir araç olan sosyal ağlar aracılığıyla dolaylı olarak yaşam deneyimi kazanmakta bununla birlikte gerçek dünyadan uzaklaşarak, yabancılaşmaktadırlar. Buradan hareketle çalışmanın amacı, öğrencilerinin sosyal medya kullanımına yönelik tutumlarının yabancılaşma davranışları üzerindeki etkisini tespit etmektir. Araştırma evrenini, 2021-2022 Eğitim ve Öğretim yılında ortaöğretim 12. sınıfta öğrenim gören öğrenciler oluşturmaktadır. Araştırma örneklemini ise; Kayseri ili Kocasinan ilçesinde bulunan Anadolu İmam Hatip Lisesi, Mesleki ve Teknik Anadolu Lisesi ile Anadolu Lisesi türlerinde son sınıfta öğrenim görmekte olan 17- 19 yaş arası 263 öğrenci oluşturmuştur. Araştırma sonucunda veri sağlanan öğrencilerin sosyal medya kullanımlarının yabancılaşma davranışlarını pozitif yönde etkilediği belirlenmiştir.

Anahtar Kelimeler: Sosyal Medya Kullanımı, Yabancılaşma, Eğitim Kurumları

THE EFFECT OF STUDENTS' SOCIAL MEDIA USE ATTITUDES ON ALIENATION BEHAVIOR: AN APPLICATION IN KAYSERİ

Abstract

Technology and technological life, which are the most important features of the era we live in, have become a part of human life. Developing technology enables the creation of vital products and new structures and dimensions. Social media, which is one of these structures; it was basically presented to humanity as a tool that allows users to share verbal and visual sharing and have fun in their spare time. Although social media is a virtual content, it gives a realistic appearance in terms of providing instant satisfaction of individual needs. However, when the individual meets these needs in the virtual world, he becomes more virtual and more disconnected from reality in meeting his real life needs. In the new perception of reality, individuals affect each other; they are forced to determine what they should feel, how they should perceive, and which identity they should adopt in order to be accepted by others. It is seen that the feelings of meaninglessness and anger increase especially because of the disappointment of the students in the educational environment. In this case, social networks create an environment that is comfortable, accessible, highly sensitive to the need for interaction with the environment, and suitable for sharing thoughts. This sense of reality, full of virtuality created by social media, distances the individual from the society and transforms the individual into a life that he or she thinks can be happy. Adolescents gain life experience indirectly through social networks, which are actually a tool, however, they distance themselves from the real world and become alienated. Based on this, the aim of the study is to determine the effect of students' attitudes towards social media use on their alienation behaviors. The research population consists of students studying in the 12th grade of secondary education in the 2021-2022 academic year. The research sample is; It consisted of 263 students between the ages of 17-19 who are studying in the 12th grade in Kocasinan district of Kayseri province. As a result of the research, it was determined that the use of social media of the students for whom data was provided positively affected their alienation behaviors.

Keywords: Social Media Usage, Alienation, Educational Institutions

GİRİŞ

Çağdaş toplumun başat sorunlarından biri olan yabancılaşma kavramının genel bir tanımı yapılamamakla birlikte "bireyin sosyokültürel ve içinde bulunduğu yapıya adaptasyon kaybının oluşması, beliren yalnızlık, hiçlik, duygusal boşluk, tedirginlik ve çaresizlik" olarak tanımlanabilmektedir (Pala, 2016: 7).

Her geçen gün hızlanan teknolojik değişimler, artan erişim hızı, gelişen ve değişen sosyal medya ve iletişim dünyasının içerikleri günlük yaşamı kolaylaştırırken, bireyin gerçekler dünyasını oluşturan görüngüleri üzerinde menfi birtakım etkileri hâsıl olmakta ve bireyi saran sosyal yapının kılavuzluğunu yapan norm ve değerleri birey içselleştirememektedir. Bu durum bir rahatsızlık, ruhsal doyum sağlayamama, yalnızlaşma oluşturarak giderek bireyin benlik mücadelesine dönüşerek bireyi soyutlanmışlık ve yabancılaşma boyutuna taşımıştır.

Sosyal medya, özellikle insanların kendilerini başkalarına özgürce ifade edebilecekleri önemli bir platformdur. Kişiler, etkileşim halinde bulundukları dijital kanallar aracılığıyla kendi öz beğenilerini ve kimliklerini oluşturup bu ürünlerle başkalarıyla iletişim kurabilir, paylaşımlarını beğenip ve paylaşımlarına yorum yaparak başkalarıyla etkileşimde bulunabilmektedirler (Hazar, 2011: 156). Bu noktada özellikle ergen ve genç bireylerin duygu ve davranışlarını bu özgür ortamda istedikleri gibi sergileyebilmeleri gerçek dünyadan koparak yabancılaşmaları ile sonuçlanmaktadır. Buradan hareketle aşağıda sosyal medya ve yabancılaşma kavramı kısaca açıklanacak daha sonra bu kavramlar arasındaki ilişkiler özetlenip, araştırma bulguları paylaşılacaktır.

Kavramsal Çerçeve

Sosyal Medya

Sosyal medya; temelde kullanıcıların sözel ve görsel paylaşımlarına izin veren bir yapıyı ifade etmektedir. İnsanların bu tür ortamları kullanarak düşüncelerini, etkinliklerini, ilgi alanlarını, farklı yaşam olaylarını başkalarıyla paylaştığı, yalnızca bilgi paylaşmak için değil, aynı zamanda yerel, ulusal veya küresel düzeydeki gelişmeleri de takip ederek bilgi aldıkları ve değişiklikleri anlık olarak takip ettikleri boş zamanlarında eğlenceli vakit geçirebileceği bir araç olarak tanımlanmaktadır. (Solmaz, Tekin, Herzem ve Demir, 2013: 24). Diğer bir deyişle sosyal ağ, üretkenliğin olduğu eski iletişim yöntemlerinin aksine sınırsız ve küresel bir ortamda birçok insanın çalıştığı, sosyal hayatın, eğitimin, reklam amacıyla kullanılan bir iletişim ve etkileşim dünyasıdır. (Öztürk ve Talas, 2015: 108). Bu dünya da birey çeşitli his ve fikirlerini ortaya dökerek kendilerine veya başkalarına ait görsel ve sözsel iletiler aracılığıyla iletişim kurmaktadır. İletişimin senkronize olarak bireylerarası olması, haber, bilgi, etkileşim ve yeni fikirlerin değer yaratan çıktılara dönüştürme süreci, reklam ve ticaret mecrası şeklinde de ifade edilebilmektedir.

Yabancılaşma

Kişinin çevresinden, sosyal hayatından, işinden, geleneğinden, benliğinden ya da bunların hepsinden uzaklaşma duygusunu ifade eden yabancılaşma kavramı (Özbudun, Markus ve Demirer, 2007: 18). Dijitalleşmenin artması ile birlikte bireylerin bireysel kültürden uzaklaşıp, nesnel kültürün etkisi altına girmişleri ile sonuçlanmıştır. Dijital platformların bu denli hayatımıza girmesi ile birlikte bireylerin kendine yabancılaşması da artmıştır (https://www.sosyologer.com/dijitallesmeye-weberin-rasyonellesme-kurami-ile-bakmak/ 2021). Bireysel kültürü, özümsemeyen bireyler, popüler kültür yani nesnel kültürün etkisi altına girip yabancılaşmaya başlamışlardır (Özbudun vd., 2007: 33).

Sosyal Medya ve Yabancılaşma İlişkisi

Yaşamsal faaliyetleri sürdürme ve fizyolojik ihtiyaçlarını karşılama etmenleri endüstri çağının oluşmasına, tarım toplumundan bilgi, makineleşme ve otomasyon dünyasının başlamasını sağlamıştır. Endüstri çağının iki başat aktörü ve yardımcısı olan "Bilgisayar" ve "İnternet" yeni bir iletişim aracı olarak gelişerek mobil teknolojiyle beraber mekândan ve zamandan bağımsız olarak interaktif bir şekilde etkileşimde bulunarak sanal bir medya ortam oluşturmuştur (Sanlav.2014:29).

Sanal medya ortamları yaşam tarzını ve sosyal yapıyı en fazla etkileyen teknolojik etmendir. Sosyal ağlar, kişilere sadece kendilerinin kurguladığı içeriğin tamamen kendilerine ait olduğu, zaman ve mekândan bağımsız sınırlaması olmayan paylaşım, etkileşim ve iletişim dünyasının kapısı araladı (Erkul, 2009: 3). Ayrıca Sosyal ağlar, insanların birbiriyle içerik ve bilgi paylaşmasını sağlayan internet siteleri ve uygulamalar sayesinde, herkes aradığı, ilgilendiği içeriklere ulaşabilmektedir. Küçük gruplar arasında gerçekleşen diyaloglar ve

paylaşımlar giderek, kullanıcı bazlı içerik (İngilizce: UGC-User Generated Content) üretimini giderek arttırmakta, amatör içerikleri dijital dünyada birer değere dönüştürmektedir. (https://tr.wikipedia.org/wiki/Sosyal_medya. 2021)

Sosyal, kültürel ve psikolojik gibi birçok alanı kapsayan anlamsal olarak bu alanlarla girift bağlantı halini alan, bir süreç olan sosyalleşme nosyonu, bilimsel alan ve yüklenildiği anlamsal bağa göre farklı şekillerde tanımlanmıştır (Balcı, 2000).

Sosyolojik olarak sosyoloji, toplumun değerler sistemini ve ideallerini kişiye iletme ve onlara sosyal yaşamdaki "rollerini" öğretme eğilimidir. Sosyalleşme yoluyla, etkileşim içine girerek birey beğendiği veya bağlı bulunduğu grubun normlarını öğrenir ve özümser, böylece oluşturduğu ve oluşum içine girdiği grup veya grupların etkisinde kendi sosyal duruşunu normlaştırır ve düzenini oluşturur. Bireyin grup içindeki içtimai tepkisi ve ruhi durumu edimsel bir değişme ve gelişimdir (Dönmezer, 1994).

Sosyalleşme düzenli olarak birbirini izleyen değişme gelişme olup bir zincir reaksiyonu göstererek bireyin tüm yaşamı buyunca devam eden kesintisiz bir olgudur. Bu noktada da bireyin içinde yaşadığı sosyal mekanizma, genel kabul gören beklentileri bireyler ve kuşaklararası anlayışla aktararak bireye rolünü öğretir. Bireyler bu etkileşim ve aktarım yoluyla kendi tavrını, çevresini nasıl algıladığını, verdiği tepkileri ve kendini algılayış meydana getirir. (İçli, 2008: 117). Tezcan'a (2003) göre genç yetişkinler, yaş olarak kendilerinden daha büyük kişilerin sosyal konumu elde etmek, kendi düşünüş, algılama ve anlayış biçimlerinin taşıdığı etkilerinin sonuçlarına sahip çıkmayı göze almak istemektedirler, fakat bu durum onların yetişkin kategorisinde yer almalarını sağlamamaktadır. (Tezcan, 2003: 167). Ergenler kendi kabulleri onay almayınca, statülerini belirginleştirmek için yakın çevresiyle çatışırlar. Çatışma sürecinde ergen, ebeveynleri için bir yabancıya dönüşmüş gibidir.

Çelik (2005: 66), araştırmasında öğrencilerin eğitim ortamında sık sık hayal kırıklığı yaşaması nedeniyle anlamsızlık ve öfke duygularının arttığı sonucuna elde etmiştir. Sosyal ağlar ise rahat, erişilebilir, çevre ile etkileşim ihtiyacına son derece duyarlı, düşünceleri paylaşmaya uygun ve yapım sürecinde karşılaşılan zorlukların üstesinden gelebilen, bu kimlik ve süreci sağlayan bir ortam yaratır.

Sosyal medya her ne kadar sanal bir içerik olsa da bireysel ihtiyaçların anında tatminini sağlaması açısından gerçekçi bir görüntü vermektedir. Bu gerçekçi görüntüde birey, sosyal ağın çevre, arkadaş ve yaşam alanı gibi geniş sanal ortamında isteklerini gerçekleştirebileceğini hisseder. Ancak birey bu ihtiyaçlarını sanal dünyada karşıladığında, ihtiyaçlarını karşılamada daha sanal ve gerçeklikten daha kopuk hale gelmektedir. Yeni gerçeklik algısında bireyler birbirini etkiler; Ne hissetmeleri gerektiğini, nasıl algılamaları gerektiğini ve başkaları tarafından kabul edilmek için hangi kimliği benimsemeleri gerektiğini belirlemek için maruz kaldıkları içeriği kullanırlar. (Karagülle ve Çaycı, 2014: 7).

Sosyal medyanın yarattığı sanallıkla dolu bu gerçeklik duygusu, toplumdan uzaklaşan bir gencin kazanabileceğini düşündüğü bir hayata dönüşmüştür. Ergenler, aslında bir araç olan sosyal ağlar aracılığıyla dolaylı olarak yaşam deneyimi kazanırlar. Marx'a göre birey, kendi elleriyle ürettiğine ve üretimde gösterdiği çabaya yabancılaştığında, doğaya, kendine, kendi etkin işlevlerine, yaşam etkinliğine ve kendi türüne yabancılaşır (Marx, 2016: 80).

Kültürel ve sanatsal başarı ile okul başarısı olmayan veya bu alanlarda yeteri kadar ilgi görmeyen iç alan ve dış alan çevresince doygunluğa eremeyen ergenler, bu durumun oluşturduğu baskıyı kırmak ve sosyal olarak belirginleşmek için sanal gerçekliği tercih edebilirler. Vangölü (2018: 55) ve Atik (2016: 111), lise öğrencileri üzerinde yaptıkları

çalışmada, düşük ders başarısı gösteren ergenlerin sınıf ve okul ortamında sosyometri dairesinin en dış tarafında yer alacağını ve dışlanmayla karşı karşıya kalma olasılığının kuvvetli olduğu sonucuna varmışlardır. Bu durum okul ortamında yalnızlaşan ergenlerin sosyal medyayı bir sığınak olarak görüp sevilme, saygı ve statü ihtiyaçlarını giderme alanı görmesine yol açarak kendisiyle ilgili bir söz veya görsel bir paylaşımı sosyal medya hesabından yayınlayarak acil ihtiyaçlarını giderme ereğinden performans gösterecektir. Bu performans çabaları suni bir ortamda bizzat yaşayarak, deneyim ederek değil, benzetim yoluyladır.

Sosyalleşme sürecinde akran gruplarından dışlanan veya kendi ailesinden ilgi görmeyen, beklentisi karşılanamayan ergenler, bir gruba ait olma ve grup refleksiyle hareket etme algısından ve duygusundan yoksun kalmaktadır. Bir gruba ait olma, grupta kendini değerli hissetme algısı ergenliğin başında ve yaşamın kalan dönemlerinde elzem ve başat bir ihtiyaçtır. İnsan yaşamı ve yapısı gereği kendisi dışında biriyle anlamlı olmakta ve hayatını anlamlandırmaktadır, yetişkinliğin ilk evresinde olan lise öğrencileri kendi yaşamlarının istemediği sonuçlara maruz kalabilir. Gedik (201: 105), araştırmasında öğrenci-öğrenci ilişkisi, öğretmen-öğrenci ilişkisi ve okul öğrenmeye yabancılaşma arasında orta düzeyde negatif bir ilişki olduğunu belirlemiştir. Sosyal mesafe durumlarında bireylere ait olma sorunları, bu bireylerin sosyal medya ortamında oluşturulan sanal gruplarla etkileşimlerini artırmalarına neden olmaktadır. Ait olma ihtiyacının olduğu ortamlar, sosyal ağlarda sanal topluluklar haline gelmiştir. Bunun nedeni, kimlik bütünlüğünde önemli bir yere sahip olan aidiyet ihtiyacının, sanal topluluklarda sürdürmeye çalıştığımız etkileşim ve iletişimi ancak gerçek kimliğin silinmesi ve ortadan kalkmasıyla aktif hale getirmesidir. Bu nedenle reşit olmayanlara ait bir ihtiyacı giderebilecek, içinde çok sayıda sanal grup barındıran veya sosyal ağın yeterliliğinden yararlanarak yeni bir grup oluşturulmasına olanak sağlayan sosyal ağları kullanma eğilimi giderek artmaktadır.

Gedik (2014:105), araştırmasında öğrenci-öğrenci ilişkileri, öğretmen-öğrenci ilişkileri ve okula yabancılaşma arasında orta düzeyde olumsuz bir ilişki olduğunu tespit etmiştir. Sosyal mesafe durumlarında bireylerle yaşanan sorunlar, bu bireylerin sosyal medya ortamlarında oluşturulan sanal gruplarla etkileşimlerinin artmasına neden olmaktadır. Ait olma ihtiyacının olduğu ortam, bir sosyal ağ üzerinde sanal bir topluluk haline gelmiştir. Bunun nedeni ise sanal topluluklarda ancak gerçek kimlik silinip yok olduktan sonra sürdürmeye çalıştığımız, ait olma, kimlik bütünlüğünde önemli bir yere sahip olma, etkileşim ve iletişimi sağlama ihtiyacıdır. Bu nedenle reşit olmayanların sosyalleşme algısını karşılayabilecek çok sayıda ve yapıda oluşum bulunmakta her geçen gün ağların hem sayısı artmak da hem ara yüzleri yenilenerek daha cazip hale gelmektedir. Bu durum ortaöğretim öğrencilerinin sosyal ağlardan sanal grup ve arkadaş ortamlarından kâfi derecede yararlanma ve kullanma temayülünü artırmaktadır (Elitaş ve Keskin, 2014: 163).

İletişim araçları ve sosyal medya kaynakları bir kişisel bilgiler havuzu oluşturmak da bu havuz da ergenler tarafından bir arkadaş ve grup kaynağı olarak yararlanma olgusuna dönüşmektedir. Ergenler, bu gruplara katılma isteklerini harekete geçirerek bu sanal gruplarla iletişim ve etkileşim içine hem girmekteler hem de başka ergenleri bu sanal yapılara çekmektir. İnternette sosyalleşme ve paylaşım grupları bu şekilde var olur. Bu sayede medya kullanılarak çoklu kimlikler inşa edilmektedir (Avcıoğlu, 2011: 366). Diğer bir deyişle medya ortamı bireylerin bu ihtiyaçlarını karşılayacak şekilde şekillenmektedir.

Gencin sosyal medyada ihtiyacını karşılayacak bir biçimde bir kimlik ve benlik algısı içine girdiği kurallarını benimsediği algısal yapıyı belirginleştirmeye çalıştığı, ona daha fazla benlik beklentisi kattığı, hoşlanmadığı olumsuz yönleri ise grubun karakterizasyonunun

dışında tutarak çürüttüğü söylenmektedir. Kullanıcı önce kendini sınıflandırır, sonra aynı sınıfa ait olduğunu düşündüğü kişilerle özdeşleştirir, onları farklı sınıflara ait kişilerle karşılaştırarak kimlik gruplarını ayırt edebilir. Sonuç olarak, beğenilen ve belirginleştirilen benlik algısını baskın düşünceye geçiş emaresi olarak beğeni ya da "retweet" yoluyla giderilebilir. Kullanıcının oluşturmaya çalıştığı bu yeniden yapılandırılmış algısal benlik tipi sosyal ağı ve iletişim kanallarını tüm içerik ve ağ olanaklarında, özgünlük katılarak simüle edilerek olmak istediği o gölge "ben"e bir araç olarak kullanılmaktadır (Bakıroğlu, 2013: 1051).

Bu nedenle ergen gerçekte olmak istediği ve iletişime geçerek asıl sosyalleşmeyi dert edindiği grup, ortam ve yaşamsal çevresiyle etkileşimi giderek bozulmaya, azalmaya başlamaktadır. İletişimle ilgili sosyal konular, bireysel statüler göz ardı edilerek sosyal medya üzerinden gerçek benliğini filtrelemektedir.

Gençler, sosyal medyanın sınırsız ortamında yabancılar tarafından oluşturulan gruplara güvenerek aidiyet duygusu kazanmak için büyük çaba sarf edebilirler. Hedef kitleyi kaybetmemek ve onlara aidiyet duygusu kazandırmak için genç kitleler ve kullandıkları uygulamalarla paylaşılması amaçlanmıştır. Sosyal medyada görsel ve sesli paylaşımlarla kendi hislerini ve değerlendirmelerini belirterek daha fazla "popüler" olma kaygısı ve ereğiyle zamanların büyük bir kısmını sanal mecralarda geçirmektedirler.

Esen ve Gündoğdu (2010: 29) yaptıkları araştırmada gençler arasında yaygın sosyal medya kullanım oranının artmasında akran baskısının büyük bir etkisi olduğu verisine ulaşmışlardır. Bu veriler ışığında, sosyal medya ortamlarında günlerinin büyük bir kısmının harcayan ortaöğretim ergenlerinin "sosyal medya" bir sosyal gruba dâhil olma, anlaşılma ve kendini ifade etme mecrasından çıkıp fizyolojik ihtiyaç zorunluluğu haline gelmiştir. Diğer yandan çeşitli sosyal medya uygulama kimliği olmayan, bu ortamlarda bulunmayan veya bulunamayan gerçek çevrelerindeki akranlara, baskısı oluşturularak onlara karşı olumsuz bir tepki gösterilmeye başlanmıştır.

Marcuse (1997: 27) bilişim araçlarının aksiyonel çabası ve çabukluğu, iletişim, barınma, yiyecek ve giyim, inançlar ve diğer unsurlar, iletişim tutumları ve alışkanlıkları ve belirli entelektüel ve duygusal unsurlar aracılığıyla tüketicileri üreticilere bağlar. Bu şekilde, çağdaş toplumun en gelişmiş alanlarında, toplumsal ihtiyaçlar bireysel ihtiyaçlara yansır ve bilgi, eğlence, kitle iletişim araçları ve ürünler aracılığıyla bireyleri telkin ve manipüle eder; kendi yanılgılarından muaf bir sevih bilinci besler. Bireyi topluma bağlayan mekanizma kendini değiştirmiştir ve toplumsal kontrol, ürettiği yeni ihtiyaçları demirleyen gerçekçi olmayan ihtiyaçlarla hatalı bir şuur çerçevesindedir. Sosyal ağlarda var olmak ve aktif olmak yapay bir ihtiyaç haline geldi.

Sosyal medyada bireyler, payda refleksini belirtmek ve kendi varlığı ile hissiyatını belirginleştirmek için paylaşımlar, "beğeniler" gibi multimedya içeriklerini kullanabilirler. Fromm'a göre, bir bireyin kimlik duygusuna ulaşması, doygunluğa erişmesi; fiziksel varoluş ihtiyacından bile daha güçlüdür. Doyuma erme performansında kendisi için baskın coşumsal tepkilerini bir süreliğine rafa kaldırıp benlik ongunluğuna mani olan bir form olarak kendi öznesinden dışsallaştırır.

Seeman'a göre kendine yabancılaşma, bireyin ve bireyin içinde yaşadığı kültürel grubun niceliğine bağlı olarak bireyin daha spesifik olarak aza yönelmesi; Güvensiz, görünüşte bağımlı, istenenden daha az uyumlu ve davranışların sonucu olarak alınan ödüllere bağımlıdır (Özbudun vd., 2007: 43). Sanal ortamda ergenler, kendilerinin değil ya olmak istediği veya sosyal medya hesaplarındaki hayat havasına göre beğeniler ölçüsünde yaşamını bir kılıfa sokmaktadır, bu durum ergenin diğerlerine göre algısı çerçevesinde bir benlik

biçimlendirmesi yapmasına yol açarak gerçek öznesinin yanına gölge, yanılsamalı "beğeni" merkezli gerçek öznesinden kopuk kendine yâd bir kimlik deforması ortaya çıkararak "ben katkılı" yabancılaşma başlatmaktadır.

Ergenler, iletişim esnasında sosyal medya platformlarında, kendi kimlikleriyle gölge kişilikler ve kurmaca dünyalarındaki başkarakterlerin belirgin özellikleriyle davranmakta bu durum da etkileşimi yanlış ve yanlı duygularla örülü iletiler zincirinde doğru algılama hedefinden saptırmaktadır. Çünkü sanal ortamda oluşturulmaya başlanan sosyalleşme fiilinde hem alıcı hem de göndericiler, reel ortamdan farklı davranmaktadır. Bu durumda "benin" müphemliği ve "güvensiz bir bilinçaltı" duygusu onları kendilerinden uzaklaştırmaya iter (Yıldırım, 2014: 55).

Sosyal medyada gerçekte olan yaşam ve yaşantısını tersine iyi, ilgi çekici, eğlenceli, kariyer kimlikli, sosyal statüsü ve maddi olanakları yüksek görünecek şekilde davranıp, sosyal medya ortamında olumlu paylaşımlarının ilgi gösterdiği algısına kapılabilir, bu algı çerçevesinde hayatlarına devam ettiğinde gerçekte var olan yaşam kalitesinin düşük olması nedeniyle psikolojik olarak hayal kırıklığı duygusunu yaşar. Bir bakıma sosyal medya, karma bir kullanıcı tabanına sahip olduğunda yabancılaşmayı ve psikolojik sorunları artırabilir.

Gençler, sosyal medyanın ünlü olma, popüler yaşam veya hayranlık duyulacak kimlik ve yaşam kalitesi fırsatı sunduğu gerçeğine kapılmaktadır. Gençler ayrıca, popülerlik kazanma özgüven ve özgürlüğünden yararlanarak somut normları veya paylaşımın iletişim anlamında doğurduğu olumsuz sonuçlarını görmezden gelerek sosyal değerlerle rekabet eder. Sosyal medyada diğer kişilerin mahremiyetini ifşa etme, karalama, alay etme kampanyası düzenleme, başkalarının fotoğraflarını herkese açık paylaşım halinde düzenleyebilir.

Seeman'a göre anormallik, bireyin amaçlarına ulaşabilmesi için antisosyal davranışlara ihtiyaç duyacak kadar çarpıtılacak bir olgudur (Özbudun ve diğerleri, 2007: 2).

Ergenin amaca ulaşmada takınabileceği normsuz davranışları, onu anormalliğe iter ve diğerinin kendisi gibi olduğu gerçeğinden uzaklaştırır. Genç birey, böylece içinden beslendiği sosyal yapıya yâd bir durum geliştirerek beslendiği değerler silsilesine yabancılaşması daha da pekiştirilir. Böylece anlamsızlaşma ve duyarsızlaşma başlar.

Sosyal medya ortamında ve günümüz sosyal yapısında en tehlikeli şiddet, yapılan şiddete karşıt tepki oluşturmaması ve kanıksanmasıdır. (Çamurdan, 2007: 26).

Seeman'a göre, bireylerin neye inanacağı konusunda net bir fikre sahip olmadığı veya karar verme açısından minimum kişisel tatmin standartlarına erişmediği durumlarda mana sayıltısı perspektifinde yabancılaşmanın yüksek olduğu söylenebilir (Kurtkan, 1984:308).

Kadın cinayeti, dolandırıcılık, trafik kuralları veya bireysel hak ve özgürlükler gibi toplumsal değere sahip olma ya da toplumun değerler mekanizmasında yer alma gibi olgu ve olayların ifade edildiği hareketli ve hareketsiz görsellerin sosyal ağlarda sık sık paylaşılması, suç olma olasılığını da artırmaktadır. Bireyin tüm bunları haklı veya haksız ekseriyetinde sorgulaması, gerekçelendirilmesi duyarsızlığı da beraberinde getirmektedir. Duruma göre gençlerin hem topluma hem de yazılı ve yazısız değerlere de yabancılaşmalarını etkileyecek bir değer metamorfolojisi oluşturmaya çalıştığı görülebilmektedir.

Her alanda çok hızlı değişim ve dönüşümün yaşandığı bilim ve teknoloji önlüğündeki 21. yüzyıl dünyasında bireyin adeta bir organı ve yaşamsal faaliyet odağı haline gelen iletişim araçları ve sosyal medya, ergenlerin bir üst gelişim dönemine geçiş sürecini bedensel ve yaşa bağlı olmasa da davranış ve beklenti noktasında hızlanmaktadır (Şeker ve Sine, 2012: 123).

Sosyal medyada iletiler doğrudan veya bilinçaltına yönelik verilmekte olup bu yönüyle içerik üretimi çeşitli illegal yapıların varlıklarını sürdürmek ve kazanç elde etme olanağını da beraberinde getirmektedir. Bu bakımdan sosyal medya bireyi içinde yaşadığı gerçek toplumdan uzaklaştırmaktadır (Alav, 2014: 15).

Durkheim, yabancılaşma kavramını doğrudan ifade etmemiş, "anomi" kavramını ortaya atmıştır (Babür, 2009: 14).

Durkheim, "anomi" kavramının ortaya çıkışını, birey toplum ilişkisinin zayıflamasına ve birey üzerindeki kültürel dinamiklerin bağlayıcılığının etkisizleşmesine işaret ederek toplumsal kurallarla uyuşmayan davranışların ortaya çıkacağını açıklamaktadır (Durkheim, 2004: 8).

Ergenlerde, dijital ortamlarda var olan görsel ve sözel verilerin karşılıklı etkileme noktasında özellikle genç yetişkinlik dönemlerinde bağımlı olma gerçeğinden kaynaklanan organik yapıya ve değerler bütününe karşı gelme, dizginsizlik ve toplumsal yabancılaşma etkisinde mensup olduğu yapıya aidiyet boşluğu oluşmakta ve sınırsız sözel ve görsel bilgilerde çok farklı değer ve normları kabul etmelerine neden olmaktadır. İçerik üretiminin kontrol sağlayıcısı cihetinde bireyin davranış biçimi ve tutumu etkilenerek bireyde farklı düşünme biçimlerine duygudaşlık artmaktadır.

Dijital ortam zamanla ergeni, gerçek yaşam örgüsündeki kişilerden soyutlayarak ergenin ilgi ve algısı doğrultusunda sosyal medya gruplarına yönlendirir. Sosyal medyanın bu menfi durumu ergeni gerçek çevresinden uzaklaştırıp ergenin sosyal ve duygusal becerilerini olumsuz yönde etkileyerek onda fiziksel, psikolojik, sosyal ve zihinsel yönden birtakım istenmeyen sonuçlar doğurmaktadır. (Muslu ve Bolışık, 2009: 447).

Bireyin öz benliğini oluşturmada sosyal ortamdaki davranış biçimi, benlik oluşumu, özgüven duygusunun gelişmesi ve sosyal etkileşimi, kendini tanıma ve somut kültürle uyumlu eş minvalde bir yapı paydaşlığı ve bu erek ışığındaki incelemeler bireyin tatmin edici ölçüde duyuşsal ve davranışsal işlevleri durumu açısından kayda değerdir.

Gençlerin ideolojik eğilim, tutum ve duygularında değiştirici, dönüştürücü ve biçimlendirici yoğun bir etki gücünü elinde bulunduran sosyal medya; bireyi gerçek yaşamındaki yakın ve uzak çevresinden koparark bireyin tutum, algı davranış gibi yaşamsal deneyimlerini tecrübe etmeden suni bir ortamda düşünsel ve görsel içerik üretimlerinden elde etmesine neden olmaktadır. Sosyal bir varlık olan insan başkasına ihtiyaç duymakta ve bu ihtiyacı da iletişime geçerek sağlamaktadır. Bu düşünceden hareketle sosyal medya iletişim ağının bir parçası olduğundan bireylerarası iletişimde yoğun bir şekilde kullanılmaktadır. Ergenler de gerek sosyal baskı gerek ilgi ve beklentilerini karşılama gerekse de toplum ve grup içinde tanınma ve öne çıkma durumlarının etkisinde sosyal medyanın yalıtılmış ve ikincil ilişki ortamlarında biçimlenip davranış değişikliği yaşamasına neden olurken, yaşam karşısında doğru pozisyon ve karar alma, sağlıklı iletişim çabası diğer bir değişle. 'gerçek ben' kimliği ve beklentisi oluşamamaktadır. Tüm bu durumlar ergenin hem kendine hem de içinde yaşadığı aile, okul ve çevresine karşı yabancılaşmasına sebep olmakta ve iletişim ve sosyal döngüde önemli değişimlere sebep olmaktadır. Bu çalışmalardan hareketle aşağıdaki hipotezler geliştirilmiştir:

H1: Öğrencilerin paylaşım ihtiyaçları ile yabancılaşmaları arasında anlamlı ve pozitif yönde ilişki vardır

H2: Öğrencilerin sosyal yetkinlikleri ile yabancılaşmaları arasında anlamlı ve pozitif yönde ilişki vardır.

H3: Öğrencilerin sosyal izolasyon duyguları ile yabancılaşmaları arasında anlamlı ve pozitif yönde ilişki vardır.

H4: Öğrencilerin öğretmenleri ile ilişkileri ile yabancılaşmaları arasında anlamlı ve pozitif yönde ilişki vardır.

H5: Öğrenicilerin sosyal medya kullanımları yabancılaşmalarını anlamlı ve pozitif yönde etkilemektedir.

Yöntem

Bu araştırma mevcut olan bir durumu tanımlamaya ve açıklamaya çalıştığı için nicel araştırma yöntemlerinden genel tarama modellerinden bağıntısal model (ilişkisel) kullanılmıştır. (Karasar, 2005; Yıldırım, Şimşek, 2018). Öğrencilerin sosyal medya kullanım tutumlarının yabancılaşma davranışlarını etkilemede durumlarını tespit etmek amaçlanmaktadır.

Araştırma evrenini, 2021-2022 Eğitim ve Öğretim yılında ortaöğretim 12. sınıfta öğrenim gören öğrenciler oluşturmaktadır. Araştırma örneklemini ise; Kayseri ili Kocasinan ilçesinde bulunan Anadolu İmam Hatip Lisesi, Mesleki ve Teknik Anadolu Lisesi ve Anadolu Lisesi son sınıfta öğrenim görmekte olan 17- 19 yaş arası 263 öğrenci oluşturmuştur. Uygulama 279 öğrenci üzerinde yapılmıştır, fakat ölçekleri olması gerektiği gibi doğru olarak dolduran 263 öğrencinin cevapları araştırmaya dâhil edilerek 19 öğrencinin formu geçersiz sayılmıştır.

Araştırmada veri toplama aracı olarak demografik bilgileri ve sosyal medya kullanım bilgilerini içeren Kişisel Bilgi Formu, sosyal medyayı nasıl algıladıklarını ve tutumlarını tespit etmek için Sosyal Medya Tutumları Ölçeği (SMTÖ) ve yabancılaşma yönelik içtepilerini ölçmek için de Dean'in Yabancılaşma Ölçeği kullanılmıştır. Araştırma gönüllülük esasına dayanarak yapılarak veri toplama araçlarına ilişkin bilgiler aşağıda verilmiştir.

- **Sosyal Medya Tutum Ölçeği:** Otrar ve Argın'nın (2015) geliştirdiği, öncelikli amacının öğrencilerin sosyal medyaya ilişkin tutumlarını belirlemek olan Sosyal Medya Tutum Ölçeği 23 maddeden oluşmaktadır. Kesinlikle Katılıyorum (5), Katılıyorum (4), Kararsızım (3), Katılmıyorum (2), Kesinlikle Katılmıyorum (1) olmak üzere 5' li Likert ölçeği şeklinde dizayn edilmiştir. Dört tane alt boyutu bulunmaktadır. Birinci alt boyut 'Paylaşım İhtiyacı' 8 maddeden oluşmaktadır. İkinci alt boyut 'Sosyal Yetkinlik' 6 maddeden oluşmaktadır. Diğer alt boyut 'Sosyal İzolasyon' 6 maddeden oluşmakta ve son alt boyut 'Öğretmenlerle İlişki' 3 maddeden oluşmaktadır. Sosyal İzolasyon alt boyutundaki maddelerin ters kodlanarak hesaplanması gerekmektedir. Sosyal Medya Tutum Ölçeği' nden en düşük 23 puan alınırken, en yüksek alınabilecek puan 115' tir. Tüm ölçeğin güvenilirlik katsayısı Cronbach α=0.852 olarak hesaplanmıştır. Alt boyutların Cronbach Alpha değerleri αmax=.81 ile αmin=.79 arasında değişmektedir. Değerlendirmesi yapılırken, ölçek toplamında ve tüm faktörlerde puan artması ilgili özelliğin arttığını göstermektedir. Ölçeğin Cronbach Alpha değeri. 67 olarak tespit edilmiştir.
- **Dean'ın Yabancılaşma Ölçeği:** Dean'ın Yabancılaşma Ölçeği, Dean (1961), tarafından Hegel, Marx, Weber, Durkheim ve Seeman gibi kuramcılardan hareketle yabancılaşmayı ve boyutlarını ortaya koymak için geliştirilmiştir. Ölçeğin Türkiye'de

kullanılması için UCLA (University of California Los Angeles)'dan gerekli izin alınarak ölçeğin Türkçeye çevirisi yapılmış ve uzman görüşleri de alınarak uygulamaya konulmuştur (Kınık, 2010: 42). Ölçeğin Cronbach Alpha değeri. 82 olarak tespit edilmiştir.

Bulgular

Demografik veriler incelediğinde araştırmaya katılan 17 yaşındaki katılımcıların 138'inin kız, 97'sinin erkek olduğu; 18 yaşındaki katılımcıların ise 6'sının kız, 21'inin erkek olduğu görülmektedir. Anadolu Lisesi'nde öğrenim gören katılımcıların 81'inin erkek, 47'sinin kız; Mesleki ve Teknik Anadolu Lisesi'nde öğrenim gören katılımcıların 40'ının kız, 28'nin erkek; Anadolu İmam Hatip Lisesi'nde öğrenim gören katılımcıların 23'ünün kız, 44'ünün erkek olduğu görülmektedir. Gelir durumu düşük düzeyde olan katılımcıların 13'ünün kız, 20'sinin erkek; orta düzeyde olan katılımcıların 126'sının kız, 92'sinin erkek; yüksek düzeyde olan katılımcıların 5'inin kız, 7'sinin erkek olduğu görülmektedir. Sosyal medya üyeliği olan katılımcıların 129'unun kız, 112'sinin erkek; sosyal medya üyeliği olmayan katılımcıların 15'inin kız ve 7'sinin erkek olduğu görülmektedir. Sosyal medyaya her gün bir kere giren katılımcıların 35'inin kız, 21'inin erkek; her gün bir kereden fazla giriş yapan katılımcıların 102'sinin kız, 90'ının erkek; haftada bir kere giriş yapan katılımcıların 3'ünün kız, 2'sinin erkek; haftada bir kereden fazla giriş yapan katılımcıların 1'inin kız, 1'inin erkek; ayda birkaç kere giriş yapan katılımcıların 3'ünün kız ve 5'inin erkek olduğu görülmektedir. İnstagram kullanan katılımcıların 93'ünün kız, 87'sinin erkek; Twitter kullanan katılımcıların 20'sinin kız, 13'ünün erkek; Youtube kullanan katılımcıların 22'sinin kız, 14'ünün erkek; Facebook kullanan katılımcıların 7'sinin kız, 4'ünün erkek; diğer sosyal medya platformlarını kullanan kullanıcıların 2'sinin kız ve 1'inin erkek olduğu görülmektedir.

Tablo 1. *Korelasyon Matrisi*

Kavramlar	x̄	ss	1	2	3	4	5	6
1.Paylaşım ihtiyacı	2.84	.59	1					
2.Sosyal Yetkinlik	2.83	.66	.478**	1				
3.Sosyal İzolasyon	2.89	.65	.600**	.592**	1			
4.Öğretmenle İlişkiler	2.74	.79	.427**	.580**	.415**	1		
5.Sosyal Medya Kullanımı	2.84	.52	.827**	.822**	.835**	.689**	1	
6.Yabancılaşma	3.42	.36	**.389****	**.256****	**.324****	**.210****	**.383****	1

Tablo 1 incelendiğinde puan ortalamaları bazında en yüksek ortalama puanın yabancılaşma ($\bar{x}$ = 3,42), en düşük ortalama puanın ise sosyal medya tutum ölçeğinin öğretmenler ile ilişki ($\bar{x}$ = 2,74) alt boyutunda olduğu görülmektedir. Bunun yanında paylaşım ihtiyacı aritmetik ortalamasının 2,84, sosyal yetkinlik aritmetik ortalamasının 2,83, sosyal izolasyon aritmetik ortalamasının 2,89 ve sosyal medya kullanımı aritmetik ortalamasının 2,84 olduğu görülmektedir. Sosyal Medya Tutum Ölçeği ve alt boyutları ile Yabancılaşma Ölçeği arasındaki ilişkileri tespit etmek amacıyla yapılan korelasyon testi sonuçlarına göre hipotezler test edilmiştir. Hipotezler incelendiğinde paylaşım ihtiyacı ile yabancılaşma arasında pozitif yönde anlamlı bir ilişki; sosyal yetkinlik ile yabancılaşma arasında pozitif yönde ve anlamlı bir ilişki; sosyal izolasyon ile yabancılaşma arasında pozitif yönde ve anlamlı bir ilişki olduğu son olarak öğretmenlerle ilişki ve yabancılaşma arasında da pozitif yönde ve anlamlı ilişki matriste görülmektedir ve bu durum H1, H2, H3 ve H4 hipotezinin kabul edildiğini ortaya koymaktadır.

Tablo 2. *Sosyal Medya Kullanımının Yabancılaşma Üzerine Etkisi Regresyon Analizi*

Değişken	B	Standart Hata ß	ß	t	p
Sabit	2,68	,113	-	23,79	,00
Sosyal Medya Kullanımı	,261	,039	,383	6,69	,00
R = ,38 R^2 = ,14 $F_{(1, 261)}$ = 44,74 p = ,00					

Tablo 2' de Sosyal Medya kullanımının Yabancılaşma üzerindeki etkisini gösteren basit doğrusal regresyon analizi sonuçları görülmektedir. Yapılan analiz sonuçlarına göre regresyon modelinin istatistiksel olarak anlamlı olduğu görülmektedir. Regresyon sonuçlarına göre sosyal medya kullanımının (ß=, 38; t= 6,69; p= ,00) Yabancılaşma üzerinde anlamlı bir yordayıcı olduğu görülmektedir. Yabancılaşmaya yönelik toplam varyansın %15'inin Sosyal Medya kullanımı ile açıklanabileceği söylenebilir. Dolayısıyla sosyal media kullanımının Yabancılaşma üzerinde pozitif yönde anlamlı bir etki gösterdiği gözönüne alındığında H5 doğrulanmaktadır.

Sonuç ve Öneriler

Bu araştırmada temel amaç, öğrencilerin sosyal medya kullanım tutumlarının yabancılaşmayı ne derece etkilediğini ortaya koymaktır. Ortaöğretim son sınıf öğrencileri ile ilgili alanyazına bakıldığında sosyal medya kullanım tutumları ile yabancılaşma eğilimi arasındaki ilişkiyi ortaya koyan çalışmalara rastlanmamakla birlikte bu konuda sınırlı sayıda da olsa yapılan bazı çalışmalarda yabancılaşmanın alt boyutları ile sosyal medya tutumlarının kısmi olarak ilişkilendirilebileceği sonuçlar mevcuttur

Daha önce bu ilişkiyi doğrulayan çalışma, Türk (2019) tarafından lise öğrencilerinin sosyal medya kullanım tutumları ölçeğinin alt boyutları ile yabancılaşma arasındaki ilişkiyi bu araştırmada olduğu gibi pozitif yönde anlamlı ilişki bulunmuştur.

Yine bu araştırmayla kısmi olarak ilişkilendirilebilecek çalışmalarda ise;

Sosyal Medya Ölçeği'nin alt boyutlarının öğrencinin öğrenim gördüğü okul türü değişkenine göre Korkut'un (2016) yaptığı çalışmada İmam Hatip Lisesi öğrencileri lehine, Argın'nın (2013) yaptığı çalışmada ise ortaokulda öğrenim gören öğrenciler lehine anlamlı farklılık tespit edilmiştir,

Yabancılaşma ile Sosyal Medya Ölçeği'nin alt boyutlarının gelir durumu değişkenine göre, Argın'ın (2013) yapmış olduğu çalışmada hiçbir alt boyutla gelir grubu arasında anlamlı farklılıklar tespit edilmezken Saraç (2014) yaptığı çalışmada farklılığın düşük gelir düzeyindeki grup lehine olduğunu saptamıştır.

Sosyal Medya Ölçeği'nin alt boyutlarının sosyal medya türü değişkenine göre Türk'ün (2019) araştırmasında Whatsapp, Bedir (2016) ve Bostancı (2010) Facebook, Argın (2013) ise çalışmalarında Facebook ve Twitter"ı ve Saraç ise (2014) Youtube kullanan grup lehine gerçekleştiğini saptamış,

Bu çalışmalar ışığında araştırmada; ortaöğretim son sınıf öğrencilerinin sosyal medya kullanımına yönelik tutum ölçeklerinin alt boyutları; sosyal izolasyon, paylaşma ihtiyacı, sosyal yeterlilik, öğretmenlerle ilişki ile yabancılaşma değişkeniyle ilgili bağlılaşımı ortaya koymak için Korelasyon ve regresyon analizi yapılmıştır.

Yapılan analizler sonucunda; Sosyal Medya Kullanım Ölçeği alt boyutlarından olan paylaşım ihtiyacı, sosyal yetkinlik, sosyal izolasyon ve öğretmenlerle ilişkiler ile yabancılaşma

arasında pozitif yönde ve anlamlı bir ilişki olduğu sonucuna varılarak çalışmanın H1, H2, H3 ve H4 hipotezinin kabul edildiğini ortaya koymuştur.

Çalışmanın regresyon analizine göre ise sosyal medya kullanımının yabancılaşma üzerinde anlamlı bir ilişkisi tespit edilerek H5 hipotezi doğrulanmaktadır.

Sonuç olarak, öğrencilerin sosyal medyada paylaşım ihtiyacı arttıkça yabancılaşma eğilimlerinin artacağına ve öğrencilerin sosyal medya kullanımından dolayı sosyal izolasyon yaşama eğilimleri arttıkça yabancılaşma eğilimlerinin de artacağına işaret etmektedir.

Yapılan bu çalışmada ve aynı konulu araştırmalar ışığında gerek ortaokul gerekse de ortaöğretim örneklemlerinde olsun varılan sonuçlarda ergenlerin hayatlarında sosyal medya kavramının ve sosyal medya argümanlarının yaşamlarında belirgin bir rol oynadığını günün aktif süresinin önemli bir kısmını internet ortamında geçirdikleri görülmektedir. Bu durum ergenleri hem okul, aile ve arkadaş ortamından hem de gerçek yaşam deneyimlerinden uzaklaştırarak yaşadığı sosyal çevreye yabancılaştırmaktadır.

Ortaöğretim son öğrencilerinin sosyal medya tutumunun yabancılaşma üzerindeki etkisi çeşitli değişkenlere göre yansımalarının araştırıldığı bu çalışmanın bulgularına ve yorumlarına hareketle araştırmacı ve uygulayıcılar için aşağıdaki öneriler geliştirilmiştir.

1. Sosyal medya tutumunun yabancılaşmaya etkisi farklı değişkenler ortaya konarak bu değişkenlerin boyutları araştırılabilir.

2. Çalışma, ortaöğretim son sınıf öğrencileriyle yapıldığından yükseköğretim veya sivil toplum ve özel kuruluşlar gibi daha farklı profildeki örneklemlere uygulanarak bu örneklem gruplarıyla ergenlerin tutumlarının karşılaştırılabileceği bir çalışma yapılabilir.

3. Ortaöğretim son sınıf öğrencilerinin sosyal medya tutumlarına ilişkin daha farklı veriler elde etmek için olayların ve olguların bütüncül bir şekilde psikolojik sayıltıları araştırmaya yönelik çalışmalar biçimlendirilebilir.

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TEMEL EĞİTİM KURUMLARI YÖNETİCİLERİNİN ETİK LİDERLİK DAVRANIŞLARININ ÖRGÜTSEL ADALET ALGILARI ÜZERİNDEKİ ETKİSİ

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Özet
Globalleşme ile birlikte günümüz iş dünyası, hızlı bir değişim ve dönüşümün yaşandığı, bilginin üretilmesi, kullanılması ve aktarılmasına yönelik her alanda (sosyal, siyasal, ekonomik gibi) değişmelerin yaşandığı bir sürecin içerisinde rekabet etmektedir. Bu süreç, sosyal hayatı da etkileyen hatta kurgulayan eğitim alanında da birçok değişimi zorunlu hale getirmiştir. Benzer şekilde bu süreç yönetim anlayışlarında ve yöneticilerin rollerinde de değişmelere yol açmıştır. Değişen yönetici rolleriyle birlikte yöneticilerin yaratıcı, yenilikçi, proaktif kişilik özelliklerinin yanı sıra değişime uyum sağlayabilen ve bu durumu da işine yansıtabilecek becerilerine de gereksinim duyduğu bilinmektedir. Bu noktada yöneticilerin bu değişim ve dönüşüme birlikte çalıştığı kişi ya da grupları da dahil edebilmesi sadece bilgi, beceri ve yetenekleri ile mümkün olamamakta liderlik özellikleri de gerektirmektedir. Çalışma arkadaşlarında radikal bir şekilde davranış değişikliği oluşturabilen, etkileyebilen lider yöneticiler kurumlarının gelecekteki başarılarının mihenk taşlarını oluşturmaktadır. Grubun ve bireylerin ortak çıkarları doğrultusunda oluşturulan etik ilkeler eşliğinde hareket eden (Bass & Steidlmeier, 1999: 200), kurumunda model olarak gösterilebilen karakter ve doğruluk, toplum/insan uyumu, motivasyon, destekleme ve güçlendirme ve etik sorumluluk çerçevesinde çalışanlarını yönlendirme davranışları gösteren etik liderlerin günümüz eğitim kurumları için önemi aşikardır. Bu aşamada okul yöneticisi ve öğretmenlerin uyum içinde çalışması önem arz etmektedir. Uyumsuzluk, kargaşa ortamı doğmasına ve olumsuz sonuçlara neden olmaktadır. İş yaşamlarında bireyler, belli kurallar ve ilkeler çerçevesinde uyum içinde hareket ederler. Hem bireysel hem de organizasyonel verimliliğin sağlanabilmesi için bu uyumun yaratılması ve sürdürülmesi için çaba gösterilmesi gerekmektedir. Bu kural ve ilkeler herkese adil bir şekilde uygulandığında hiçbir sorun oluşturmaz iken aksi takdirde dedikodu, iletişimsizlik, yabancılaşma ve iş tatminsizliği gibi olumsuz sonuçlar ortaya çıkmaktadır (Aykan, Sönmez, 2014: 5). Buradan hareketle, eğitim kurumlarında etik liderlik özelliğine sahip yöneticilerin kurumlarında daha adil davranış göstereceği varsayılmaktadır. Bu bağlamda araştırmanın konusu temel eğitim kurumlarında çalışmakta olan öğretmen ve yöneticilerin etik liderlik davranışlarının öğretmenlerin örgütsel adalet algıları üzerindeki etkisini araştırmaktır. Araştırma evrenini Kayseri ilinin Talas ilçesinde bulunan 2021-2022 Eğitim-Öğretim yılında Temel Eğitim Kurumlarında görev yapan yaklaşık 800 öğretmen oluşturmuş, bu öğretmenlerden 210'undan veri sağlanmıştır. Araştırma sonucunda veri sağlanan yönetici ve öğretmenlerin etik liderlik davranışı sergilendiği, etik liderlik davranışlarının örgütsel adalet üzerinde pozitif yönlü etkisi olduğu tespit edilmiştir.

Anahtar Kelimeler: Etik Liderlik, Örgütsel Adalet, Eğitim Kurumları

THE EFFECT OF THE ETHICAL LEADERSHIP BEHAVIOR OF THE MANAGERS OF BASIC EDUCATION INSTITUTIONS ON PERCEPTIONS OF ORGANIZATIONAL JUSTICE

Abstract

With globalization, today's business world is competing in a process where rapid change and transformation is experienced, and changes are experienced in every field (social, political, economic) regarding the production, use and transfer of information. This process has necessitated many changes in the field of education, which also affects and even constructs social life. Similarly, this process has led to changes in the understanding of management and the roles of managers. It is known that with changing managerial roles, managers need creative, innovative and proactive personality traits as well as skills that can adapt to change and reflect this situation to their work. At this point, it is not possible for managers to include the people or groups they work with in this change and transformation, not only with their knowledge, skills and abilities, but also requires leadership characteristics. Leading managers, who can radically change the behavior of their colleagues and influence them, are the cornerstones of the future success of their institutions. The importance of ethical leaders, who act in line with the ethical principles created in line with the common interests of the group and individuals, and who can be shown as a model in their institution, is obvious for today's educational institutions. At this stage, it is important that school administrators and teachers work in harmony. Incompatibility creates an atmosphere of turmoil and causes negative consequences. In business life, individuals act in harmony within the framework of certain rules and principles. Efforts must be made to create and maintain this harmony in order to ensure both individual and organizational efficiency. While these rules and principles are applied fairly to everyone, there is no problem, otherwise negative results such as gossip, miscommunication, alienation and job dissatisfaction arise. From this point of view, it is assumed that administrators with ethical leadership in educational institutions will behave more equitably in their institutions. In this context, the subject of the research is to investigate the effect of ethical leadership behaviors of teachers and administrators working in educational institutions on teachers' perceptions of organizational justice. The population of the research consisted of approximately 800 teachers working in Educational Institutions in the 2021-2022 academic year in Talas district of Kayseri province, and data was obtained from 210 of these teachers. As a result of the research, it was determined that the administrators and teachers whose data were provided exhibit ethical leadership behaviors and that ethical leadership behaviors have a positive effect on organizational justice.

Keywords: Ethical Leadership, Organizational Justice, Educational Institutions

GİRİŞ

Liderlik hakkında çok sayıda araştırma yapılan bu çalışmaların bazısında lider ve liderliğin özellikleri vurgulanırken, bazılarında da liderin davranışları ve otorite kaynakları, lideri ve liderliği ortaya çıkaran koşullar ve durumsal özellikler üzerinde durulan bir kavramdır. Özellikle yaşadığımız mevcut zaman içerisinde, sosyal ortamının karmaşıklığı ve insan ilişkilerindeki anlaşmazlıklar, liderlere yeni ve oldukça zor bir görev yüklemektedir. Bu rol, liderlerin, etik değerler ve inançlar sistemine sahip olması ve örgütteki çaba ve eylemlerin bu

sistem çerçevesinde geliştirilmesini gerektirmektedir. Lider, bir yandan liderliği öğrenmek ve uygulamak sorumluluğunu yerine getirmek, diğer yandan da örgütsel olayları ahlaki bir süzgeçten geçirerek doğru karar vermek durumundadır. Söz konusu kurumda etik bir ortam oluşturma sorumluluğu, yöneticinin liderlik anlayışına yeni boyutlar eklemektedir. Bu yeni boyutlar, bütünsel olarak incelendiğinde söz konusu kurumun yöneticisinin etik liderlik rollerini ortaya koyması gerekmektedir (Yıldırım, 2010). Diğer yandan işletmelerde çalışanlar olay ve olguları izleyerek öncelikle yöneticilerinin adilliğini değerlendirmektedirler. Benzer şekilde ücretlerini, yöneticilerin ya da iş arkadaşlarının kendilerine adil davranıp davranmadığını ya da işyerinde verilen ödüllerin dağıtılma şeklinin adil olup olmadığını değerlendirerek, bu duruma uygun davranışlar sergilemekte ve aynı davranışı yöneticilerinden de beklemektedirler. Kısaca örgütlerde çalışanların adalet algılarını yönetici ya liderlerin etik liderlik davranışları yönlendirebilmektedir. Buradan hareketle, bu çalışmada etik liderlik ve örgütsel adalet kavramları açıklanarak, etik liderin örgütsel adalet ilişkisindeki rolü ortaya konmaya çalışılmıştır. Dolayısıyla bu çalışmanın, etik liderlik ve örgütsel adalet alanında yapılan çalışmalara katkı sağlaması umulmaktadır.

KAVRAMSAL ÇERÇEVE

Örgütsel Adalet

Adalet konusu tüm bireyler için önemli olarak görülse de hızla değişen iş hayatında örgütsel adalet kavramı çalışanlar için önemini artırmıştır (Işık ve diğerleri, 2012). Örgütsel uygulamanın adil olması, çalışanların çabalarını destekleyen ve coşkularını sürdüren önemli bir faktördür (Töremen, 2001). Örgütsel adalet, çalışan bireylerin kişisel tatmini ve örgütün işlevlerini etkin bir şekilde yerine getirebilmesi için gerekli bir koşuldur. Örgütsel sorunların kaynağı olarak adaletsizlik görülmektedir (Gül ve İnce, 2014). Örgütsel adalet, adil ve ahlaki uygulama ve işlemlerin örgüt içerisinde egemen kılınmasını ve teşvik edilmesini içeren bir düşünceleri içermektedir (İşcan ve Naktiyok, 2004). Örgütsel adalet algısı, bireylerin örgüt dâhilinde kendilerine karşı adil olup olunmadığına yönelik bir yargıya varmalarını ve bu duyguları yorumlama biçimlerini ifade etmektedir (Yeşiltaş ve diğerleri, 2012).

Etik Lidelik

Literatüre “Etik” kelimesi yunanca “Ethos” sözcüğünden girmiştir. Etik, doğru davranışlarda bulunmak ve her koşulda doğru duruşu sergilemektir. Etik evrensel değerleri içermekte, iyi kötü nedir gibi kavramlar üzerinde durmaktadır. Lider ise bulunduğu ortamda veya grupta içinde bulunduğu topluluğa önderlik eden ve arkasından kitleleri sürükleyen kişiyi ifade etmektedir. Etik ve liderlik kendi içinde iç içe geçmiş durumda olup birbirleriyle ilişkilendirilmiş kavramlardır. Etik lider, astlarını etkilemeye yönelik olarak moral gücüne dayanan bir liderlik tarsi olup izleyiciler üzerinde güçlü bir etki oluşturan, ve çalışanların örgüt amaçlarını gerçekleştirmelerine yardım eden üstün özellikli kişi olarak tanımlamaktadır (Yıldırım, 2010).

Örgütsel yaşamda çalışanlar, çözülemeyen etik sorunlarla karşılaştıklarında onlara rehberlik edebilecek ve sorunları herkesin kabul edebileceği şekilde çözebilecek liderlere ihtiyaç duymaktadırlar (Sezgül, 2010). Günümüzde örgütlerin karşılaştığı en önemli sorunlardan birinin etik liderlik davranışının eksikliği olduğu söylenmektedir (Monahan, 2012). Bazı yazarlar, liderliğin etik boyutunun dönüşümcü liderlik ve karizmatik liderlikte yer aldığını belirtmişlerdir. Ancak Bass ve arkadaşlarına göre ise; dönüşümcü ve karizmatik liderlerin de etik olmayan davranışlar sergileyebileceklerini ifade etmektedirler (Bass, 1985; Kalshoven, et al., 2010; Brown, et al., 2005). Etik liderlik sadece liderlerin etik özelliklerini vurgulamakla kalmıyor, aynı zamanda insanların ödül ve cezalardan ve örnek davranışlardan öğrendiğini vurgulayan sosyal öğrenme teorilerini de kullanıyor gibi görünmektedir (Mayer, et al., 2009).

Etik Liderlik ve Örgütsel Adalet İlişkisi

Etik liderlerin, örgütsel adalet boyutlarını kendilerine rehber alarak çalışanlarına adil, yansız ve tarafsız davranmaları beklenmektedir. İzleyicilerin liderin davranışlarındaki adalet algılarının hem memnuniyet ve bağlılık gibi iş tutumlarını hem de örgütsel çıktıları etkileyeceği ifade edilmektedir (Zhu, et al., 2004). Etik liderlerin sergiledikleri ve çalışanlar tarafından adil olarak algılanan kararlar verme; karar verirken ilkeli ve adil terciler yapma (Brown, et al., 2005); işlem adaletinin kapsamını genişletmek için çalışanların karar verme sürecine katılımını sağlama (Zhu, et al., 2004) ve çalışanlara saygılı ve dürüst davranma (Arslantaş ve Dursun, 2008; Uğurlu, 2009) gibi etik davranış özelliklerinin örgütsel adaletin boyutlarıyla örtüştüğünü söylemek mümkündür.

Adaletin etik içerisinde önemli bir yeri vardır ve adil olmak etik liderliğin önemli özelliklerinden birisidir (Yıldırım, 2010). Yapılan çalışmalar (Pillai et al., 1999; Uğurlu, 2009; Uğurlu ve Üstüner, 2011; Aykanat ve Yıldırım, 2012; Yıldırım, 2010), liderlik ve örgütsel adalet arasında önemli bir ilişkinin bulunduğuna vurgu yapmışlardır. Benzer şekilde Mayer (et al., 10 2012), etik liderliğin çalışanlara adaletli davranma özelliği ile etkileşim adaletinin örtüştüğünü belirterek etik liderlik ile örgütsel adalet ilişkisini vurgulamaktadır. Etik liderlerin adalet yargılamaları, aldıkları kararlar ve verdikleri cezalar izleyenleri tarafından gözlemlenmekte ve örnek alınmaktadır (Arslantaş ve Dursun, 2008). Bu çalışmalardan hareketle aşağıdaki hipotezler geliştirilmiştir:

H1: Yöneticilerinin etik liderlik davranışları ile örgütsel adalet algıları arasında anlamlı ve pozitif yönde ilişki vardır.
H1a: Yöneticilerinin etik liderlik davranışları ile çalışan–yönetici ilişkisi algıları arasında anlamlı ve pozitif yönde ilişki vardır.
H1b: Yöneticilerinin etik liderlik davranışları ile çalışan-çalışan ilişkisi adaleti algıları arasında anlamlı ve pozitif yönde ilişki vardır.
H2: Yöneticilerinin etik liderlik davranışları örgütsel adalet algılarını anlamlı ve pozitif yönde etkilemektedir.

YÖNTEM

Temel Eğitim Kurumları yönetici ve öğretmenlerinin örgütsel adalet algıları ile etik liderlik davranışları arasındaki bağıntıyı belirlemeyi hedefleyen çalışmada niceleyici araştırma yöntemlerinden tarama modelinin bir türü olan ilişkisel tarama modeli kullanılmıştır. Araştırmanın evrenini Kayseri ilinin Talas ilçesinde bulunan Temel Eğitim Kurumlarındaki 855 öğretmen oluşturmaktadır (https://talas.meb.gov.tr/meb_iys_dosyalar/2020_01/20113707_STRATEJYK_PLAN_2019-2023.pdf). 2021-2022 Eğitim-Öğretim yılında Talas ilçesindeki Temel Eğitim Kurumlarındaki öğretmenlerin arasından basit rastgele örneklem seçimi yöntemiyle 210 öğretmen ve yönetici araştırmanın örneklemini oluşturmaktadır.

Araştırmada toplanan veriler kişisel bilgi formu ve iki ayrı ölçekle elde edilmiştir. Araştırmaya katılan öğretmenlerde kişisel bilgilerine "Kişisel Bilgi Formu" kullanılarak ulaşılmıştır. Öğretmenlerin örgütsel bağlılıklarıyla ilgili davranışları "Örgütsel Adalet Ölçeği" kullanılarak toplanmıştır. Öğretmenlerin algılanan etik liderlik ile ilgili "Etik Liderlik Ölçeği" kullanılmıştır. Bu veri toplama araçları ile ilgili temel bilgilerle ilgili aşağıda açıklama yapılmıştır.

- **Örgütsel Adalet Ölçeği:** Donovan, Drasgow ve Munson (1998) tarafından geliştirilen ve Wasti (2001) tarafından Türkçe'ye uyarlanarak geçerlilik ve güvenilirliği yapılan 18 ifadenin yer aldığı Örgütsel Adalet Ölçeği yer almaktadır. Çalışanların iş ortamındaki ilişkileri, genel olarak, ne denli adil olarak algıladıklarını değerlendiren

bu ölçekte, 14 ifade yöneticilerle ilişkileri ve 4 ifade de çalışanlarla ilişkileri ölçmeye yöneliktir. Ölçeğin içsel tutarlılığı ise α=.65 olarak tespit edilmiştir.

- **Etik Liderlik Ölçeği:** Etik Liderliği ölçmek için Ponnu ve Tennakoon (2009) tarafından geliştirilmiş Arslantaş ve Dursun (2008) tarafından da Türkçe ye uyarlanmış 10 ifadeli ölçek kullanılmıştır. Ölçeğin içsel tutarlılığı ise α=.75 olarak tespit edilmiştir.

BULGULAR

Araştırma Örneğine ilişkin Bulgular:

Araştırmaya katılan öğretmenlerin ağırlıkta olduğu yaş dilimlerin 30-39 ve 40-49 yaş aralığında olduğu gözlemlenmiştir. 30-39 yaş aralığında 83 kişi katılmış olup % 39,5, 40-49 yaş aralığında ise 69 kişi katılmış olup % 32,9 oran mevcuttur. Cinsiyet durumlarını gösterir özelliklerde kadınların erkeklere nazaran fazla olduğu görülmektedir. Erkekler 101 kişi ile % 48,1, kadınlar ise 109 kişi ile % 51,9'dur. Evlilerin fazla olduğu görülmektedir. Evliler 177 kişi ile % 84,3 bekârlar ise 33 kişi ile % 15,7olduğu tespit edilmiştir. Anketimize katkı veren çalışanlardan öğretmen olanlar 159 kişi olup % 75,7, müdür yardımcısı olanlar 26 kişi olup % 12,4 ve son olarak müdür olanlar 25 kişi olup % 11,9'luk bir oran mevcuttur.

Tablo 1. *Korelasyon Matrisi*

Kavramlar	x̄	ss	1	2	3	4
1. Çalışan–yönetici ilişkisi algısı	3.10	.38	1			
2. Çalışan–çalışan ilişkisi algısı	2.94	.37	.028	1		
3.Örgütsel adalet algısı	3.07	.31	.965**	.291**	1	
4.Etik liderlik	2.12	.70	.134	.190**	.179**	1

Tablo 1 incelendiğinde puan ortalamaları bazında en yüksek ortalama puanın çalışan-yönetici ilişkisi algısının (x̄ = 3,10), en düşük ortalama puanın ise etik liderlik (x̄ = 2,12) alt boyutunda olduğu görülmektedir. Bunun yanında çalışan-çalışan ilişkisi aritmetik ortalamasının 2,94, örgütsel adalet algısının aritmetik ortalamasının 2,83 olduğu görülmektedir. Örgütsel Adalet Algısı Ölçeği ve alt boyutları ile Etik Liderlik Ölçeği arasındaki ilişkileri tespit etmek amacıyla yapılan korelasyon testi sonuçlarına göre hipotezler test edilmiştir. Hipotezler incelendiğinde yöneticilerinin etik liderlik davranışları ile örgütsel adalet algıları arasında anlamlı ve pozitif yönde ilişki; yöneticilerinin etik liderlik davranışları ile çalışan–yönetici ilişkisi algıları arasında anlamsız ilişki; yöneticilerinin etik liderlik davranışları ile çalışan-çalışan ilişkisi adaleti algıları arasında anlamlı ve pozitif yönde ilişki olduğu görülmektedir. Bu durum H1, H1a, hipotezlerinin kabul, H1b hipotezinin reddini gerektirmektedir.

Tablo 2. *Yöneticilerinin Etik Liderlik Davranışlarının Örgütsel Adalet Algısı Üzerine Etkisini Tespit Etmeye Yönelik Regresyon Analizi*

Değişken	B	Standart Hata	ß	t	p
Sabit	,902	,469	-	1,924	,056
Örgütsel Adalet Algısı	,398	,152	,179	2,620	,009
R = ,179 R^2 = ,032					
F= 6,863 p = ,009					

Tablo 2' de Yöneticilerin etik liderlik algılarının örgütsel adalet algısı üzerindeki etkisini gösteren basit doğrusal regresyon analizi sonuçları görülmektedir. Yapılan analiz sonuçlarına göre regresyon modelinin istatistiksel olarak anlamlı olduğu görülmektedir. Regresyon sonuçlarına göre yöneticilerin etik liderlik algılarının (ß=, 179; t= 2,62; p= ,00) örgütsel adalet algısı anlamlı bir yordayıcı olduğu görülmektedir. Örgütsel adalet algısı yönelik toplam varyansın yaklaşık %5'inin yöneticilerin etik liderlik algılarının ile açıklanabileceği

söylenebilir. Dolayısıyla yöneticilerin etik liderlik algılarının örgütsel adalet algısı üzerinde pozitif yönde anlamlı bir etki gösterdiği gözönüne alındığında H2 doğrulanmaktadır.

SONUÇ VE ÖNERİLER

Bu araştırmanın amacı yöneticilerin etik liderlik davranışlarının öğretmenlerin örgütsel adalet algıları üzerindeki etkilerini ortaya koymaktır. Etik liderlik ve örgütsel adalet kavramları eğitim sektöründe önemli olarak kabul edilmekte ve eğitim çalışanlarının etik liderlik algılarının örgütsel adalet algıları üzerinde etkili olabileceği düşünülmektedir. Bu çıkış noktası ile etik liderliğin örgütsel adalet üzerindeki etkisinin tespit edilmesi ve böylece literatüre katkı sağlanması amacıyla yürütülen bu çalışma, Kayseri ili Talas ilçesindegörev yapmakta olan Temel Eğitim Kurumlarında görevli 210 çalışanına anket uygulanmak suretiyle yürütülmüştür.

Etik liderlik davranışlarının örgütsel adalete etkisinin olup olmadığını incelemek amacıyla yapılan bu araştırmada etkiyi anlamak için hipotezler oluşturulmuş ve bu hipotezler korelasyon analizi ile test edilmiştir. Hipotezlerde etik lider özelliklerinin örgütsel adalet ile pozitif ilişkili olduğu, etik liderlik algıları ile örgütsel adalet boyutlarından yönetici-çalışan algısı ile ilişkisi görülmezken, çalışan-çalışan ilişkisi alt boyutunda pozitif yönlü ilişki tespit edilmiştir. Ayrıca yöneticilerin etik liderlik algılarının örgütsel adalet algısı üzerinde pozitif yönde anlamlı bir etki gösterdiği sonucuna varılmıştır.

Yapılan analizler sonucunda Kayseri ili Talas ilçesindeki Temel Eğitim Kurumlarında görev yapmakta olan yönetici ve öğretmenlerin etik liderlik davranışı sergilendiği ve etik liderlik davranışlarının örgütsel adaletin sağlanmasında önemli rol oynadığı görülmüştür. Çalışmanın bu bulgusu özellikle eğitim sektöründe yürütülen pek çok çalışmanın (Yıldırım, 2010; Uğurlu, 2009) sonuçları ile de uyumludur.

Örgütsel adaleti tahsis etme çabası içinde olan yöneticilerin belli başlı konulara dikkat etmelerini gerekmektedir. Yöneticilerinin gösterdikleri etik liderlik davranışları ile kurumda örgütsel adaletin sağlanması birbiriyle çok yakından ilişkilidir. Dolayısıyla, yöneticilere bu kavramlara ilişkin kuramsal ve uygulamaya yönelik bilgilerin verilmesi ve buna yönelik uygun davranışlar sergilemelerinin sağlanması örgütsel adalet açısından oldukça önemlidir. Yöneticilerinin etik liderlik davranışlarını gösterme düzeylerinin geliştirilmesi için liderlik alanındaki çağdaş anlayışlar dikkate alınarak eğitim programları düzenlenmelidir. Bu eğitim programları, yöneticilerin gerek hizmet öncesinde ve gerekse hizmet içi eğitimine olanak sağlayacak şekilde planlanmalıdır. Yöneticiler, sahip oldukları kurumsal ve sosyal sorumluluk anlayışlarını, davranışlarında göstermeli ve liderlik rollerini yerine getirerek çalışanlarını da bu konuda etkilemelidirler.

Eğitim sektörü teknolojinin yoğun olarak kullanıldığı bir alan olmakla birlikte hizmet sektörü olmasının doğal sonucu olarak emek yoğun bir sektördür. Eğitim kurumları çalışanlarının örgütleri ile ilgili tutum ve algıları, örgütte çalışmaya devam etmelerinde ve performansları üzerinde belirleyici rol oynamaktadır. Çalışanlar, iş ortamında kendilerine haksız davranıldığını hissettiklerinde örgütlerine karşı olumsuz tepkiler verebilmektedir. Eğitim personelinin örgütsel adalet algılarının yükseltilmesi örgütteki pek çok çıktı değişkeni üzerinde pozitif etkilere sahiptir. Dolayısıyla örgüt için oldukça önem taşıyan bir konu olan çalışanların adalet algısı üzerinde oldukça önemli etkilere sahip olduğu ortaya koyulan etik liderliğin eğitim kurumlarında uygulanmasının da önemli olduğu düşünülmektedir.

Etik liderlik örgütlerde etiği yerleştirmek için kullanılan, verilen her kararda ve atılan her adımda etik değer, ilke ve standartları oluşturmak, ortaya koymak ve geliştirmek için ihtiyaç duyulan bir liderlik biçimidir. Etik liderler örgütteki etik değerleri belirlemek ve netleştirmek

yanında tüm çalışanlar için de rol modeli olma özelliğine sahiptirler. Tüm örgütlerde olduğu gibi eğitim kurumlarında etik davranışların önemini vurgulayacak bir kültürü yaratmak ve sürdürmekten yöneticiler sorumludurlar. Bu anlamda, eğitim kurumları yöneticilerine etik liderliğin önemine ve etik konular üzerine eğitimlerin verilmesi diğer bir ifadeyle etik liderlik davranışlarının gelişiminin sağlanması önem taşımaktadır. Ayrıca eğitim çalışanlarının etik liderlik algısının geliştirilmesinde oluşturulacak etik komitelerin ve bu etik komiteler vasıtasıyla geliştirilecek etik kodların yararlı olacağına inanılmaktadır.

Bu çalışma, Kayseri ili, Talas İlçesi'ndeki Temel Eğitim Kurumlarında görev yapan yönetici ve öğretmenler ile sınırlandırılmıştır. Buna benzer bir araştırma yapılırken farklı il ve bölgelerdeki ilkokullar dâhil edilebilir. Bu nedenle araştırmadan elde edilen bulguların karşılaştırılmasının etik liderlik ve örgütsel adalet arasındaki ilişki araştırmalarına fayda sağlayacağı söylenebilir. Ayrıca, farklı bölümlerde çalışan yönetici ve öğretmenlerin etik liderlik ve örgütsel adalet hakkında nitel ve karma araştırma yapılması önerilmektedir.

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MACHINE LEARNING ALGORITHMS SELECTION PROBLEMS RESOLVED WITH ARTIFICIAL INTELLIGENT RULE-BASED EXPERT SYSTEM USING VISIRULE

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Abstract

Everybody is confronted daily with cluster of decisions that must be appropriately taken in the process of making decision; individuals are faced with and most often fall prey to series of common biases, fallacies, and many other decision-making odds. In determining which algorithm to apply for analysis (with machine learning using supervised and unsupervised approaches) open to critical steps to be taken and also highly depend on many factors ranging from the type of problem at hand to the expected outcomes. The study looks at how artificial intelligent approach with expert system would be helpful in making timely decision on which type of algorithms is capable to be applied and implemented to have desired results. The study also uses VisiRule software to model series of successful channels to arrive at a good decision-making means. The use of VisiRule (Artificial Intelligent Based Expert System) was employed to give directional path ways to the selection of appropriate algorithms from supervised and unsupervised machine learning to different classification methods, regression methods, clustering approaches, dimensionality reduction methods, and association rules. The outcome of this study demonstrates the easy way through paths to select relevant and most appropriate model or algorithm that best fit the analysis at hand with detailed explanation of each alternative option. The use of VisiRule software has proven the easy way to achieve decision making problems without any codes requirement for such actions. Decision making challenges could be resolved by just implementing artificial intelligent rule-based expert system which require less time, coding free, and highly achievable accurate outcomes.

Keywords: Decision Making, VisiRule, Artificial Intelligent, Rule-based System, Expert System

Introduction

Decision making has been a carefully and procedural actions taken by every individual in the society. Researchers are increasingly investigating the conditions attached to application of models or algorithms and how to identify the most suitable existing algorithms/models for solving a problem. The decision-making regarding selection of Algorithm/models is concerned with the kind of procedures or conditions available to apply an algorithm and selecting the best algorithm to solve a given problem (Kotthoff, 2012). Researchers of machine learning algorithms need methods that can help them to identify algorithm or their

groupings (combinations) that achieve the potentially best performance. Selecting the best algorithm to solve a given problem has to do with having well conversant knowledge of conditions to select or use an algorithm/model and which one (Out of available algorithms) could give the required and optimal solution to the problem at hand and finally at what mode of operation to follow – Single or combined method (Abdulrahman, Adamu, Ibrahim, & Muhammad, 2017).

A proliferation of algorithms/models exist, rooted in the fields of machine learning, statistics, pattern recognition, artificial intelligence, and database systems, which are used to perform different data analysis jobs on large volumes of data. The decision to take in order to recommend the most suitable algorithms has thus become rather challenging. Moreover, the problem is exacerbated by the fact that it is necessary to consider different combinations of parameter settings, or the constituents of composite methods such as ensembles (Abdulrahman, Adamu, Ibrahim, & Muhammad, 2017).

It was observed that before a machine learning algorithm/model is trained, the researcher of a machine learning software tool or algorithm typically must manually select a machine learning algorithm and set one or more model parameters termed hyper-parameters. The algorithm and hyper - parameter values used can greatly impact the resulting model's performance, but their selection requires special expertise as well as many labor-intensive manual iterations. To make machine learning accessible to everyone interested to use them, with limited computing expertise, computer science researchers have proposed various automatic selection methods for algorithms and/or hyperparameter values for a given supervised machine learning problem (Luo, Gang, 2017).

The correct use of model evaluation, model selection, and algorithm selection techniques is vital in academic machine learning research as well as in many industrial settings (Dhabarde, 2019). Selecting the right algorithm is an important problem in computer science, because the algorithm often has to exploit the structure of the input to be efficient. So, solutions to the algorithm selection problem can inspire models of human strategy selection. Therefore, the algorithm selection problem as a special case of meta-reasoning and need to be tackled in a systematically approach manner (Lieder, Plunkett, Hamrick, Russell, Hay, & Griffiths, 2014).

Related Literatures

The approach to select appropriate algorithm/model was viewed in two ways: the first aspect is looking at conditions to use an algorithm/model or combinations of algorithms/models and how possible for researcher to select the best algorithm/model to solve a kind of problem. Studies in the past contributed to this trend. The use of application software is a great opportunity to resolve the problem with artificial intelligent rule-based expert system via Visirule. This knowledge can help us to select the best algorithm for these instances. According to Kotthoff, (2012) Algorithm Selection techniques have achieved significant performance improvements. They unified and organized the vast literature according to criteria that determine Algorithm Selection systems in practice. The comprehensive classification of approaches identified and analyzed the different directions from which Algorithm Selection has been approached. Their paper contrasted and compared different methods for solving the problem as well as ways of using these solutions. Their study was closed by identifying directions of current and future research.

This survey presented by Abdulrahman, Salisu Mamman; Adamu, Alhassan; Ibrahim, Yazid Ado & Muhammad, Akilu Rilwan (2017) looked into an overview of the contributions made

in the area of algorithm selection problems. They presented different methods for solving the algorithm selection problem identifying some of the future research challenges in this domain. They further added that researchers have long ago recognized that it is difficult to identify a single best algorithm that will give the best performance across all problems. This is why later on many researchers have developed different approaches to addressing the algorithm selection problems. There are many approaches to addressing the algorithm selection problem; in connection to this, Kotthoff, Gent & Miguel, (2012) claimed that machine learning is an established method of selecting algorithms to solve hard search problems.

The algorithm selection problem, as explained by Rice, (1976) has attracted a great deal of attention, as it endeavours to select and apply the best algorithm(s) for a given task (Brazdil, Carrier, Soares & Vilalta, 2008; Smith-Miles, 2009). The algorithm selection problem can be cast as a *learning* problem: the aim is to learn a model that captures the relationship between the properties of the datasets, or meta-data, and the algorithms, in particular their performance. This model can then be used to predict the most suitable algorithm for a given new dataset as viewed by Abdulrahman, Salisu Mamman; Adamu, Alhassan; Ibrahim, Yazid Ado & Muhammad, Akilu Rilwan (2017).

Kotthoff, Lars; Gent, Ian P & Miguel, Ian (2012) conducted a study where they compared the performance of a large number of different machine learning techniques from different machine learning methodologies on five data sets of hard algorithm selection problems from the literature. They demonstrated that there is significant scope for improvement both compared with existing systems and in general. At the end, they gave clear recommendations as to which machine learning techniques were likely to achieve good performance in the context of algorithm selection problems. In particular, they showed that linear regression and alternating decision trees have a very high probability of achieving better performance than always selecting the single best algorithm. Luo, (2017) researched on machine learning studies automatic algorithms that improve themselves through experience. Their paper reviewed methods, identified several of their limitations in the big biomedical data environment, and provided preliminary thoughts on how to address these limitations. The findings established a foundation for future research on automatically selecting algorithms and hyper-parameter values for analyzing big biomedical data.
Guo & Hsu, (2007) In their paper, they presented a machine learning-based approach to address models induced from algorithmic performance data can represent the knowledge of how algorithmic performance depends on some easy-to-compute problem instance characteristics. Using these models, they could estimate approximately whether an input instance was exactly solvable or not. Furthermore, when it was classified as exactly unsolvable, they could select the best approximate algorithm for it among a list of candidates. The results showed that the machine learning-based algorithm selection system could integrate both exact and inexact algorithms and provide the best overall performance comparing to any single candidate algorithm
Dhabarde, (2019) regarded machine learning as subfield of AI concerned with intelligent systems that learn. According to him, to understand machine learning, it is helpful to have a clear notion of intelligent systems. Therefore, their paper reviewed different techniques that could be used for each of the three subtasks and discussed the main advantages and disadvantages of each technique with references to theoretical and empirical studies. Common cross-validation techniques such as leave-one- out cross-validation and k-fold cross-validation were reviewed, the bias-variance trade-off for choosing k was discussed, and practical tips for the optimal choice of k were given based on empirical evidence

Lieder et al., (2014) applied theory to model how people choose between cognitive strategies and test its prediction in a behavioral experiment. They found out that people quickly learn to adaptively choose between cognitive strategies. People's choices in our experiment were consistent with the model used but inconsistent with previous theories of human strategy selection. Rational meta-reasoning appears to be a promising framework for reverse-engineering how people select between cognitive strategies and translating the results into better solutions to the algorithm selection problem. Masood, Khan, Hussain & Shaukat, (2020) carried out studies on the systematic literature review (SLR) that has been performed to get 20 studies (2012-2019) in the area of EDM. From these studies, 11 highly advanced machine learning models has been obtained and they have implemented them on 2 public student databases in order to predict their future outcomes. Feature extraction techniques were applied and then models have been trained based on the databases to get the required results. Results of different machine learning models were compared in order to find out the best model among them based on accuracy and F-measure. With these experiments, weak students can be easily identified and proper precautions can be taken in order to help them.

Materials and Methods

The study employed the use of artificial intelligent rule-based expert system using Visirule software. Visirule software is designed for researchers as a decision supporting tool that the rules are basically and precisely presented without writing any simple code. The approach was based on the use of Logic Programming Model. The rule-based Expert system is of great use to researchers in making appropriate and relevant selection of machine learning algorithm suitable for statistical data analysis in researches (Muraina, Rahman, Adeleke, & Aiyegbusi, 2013). It allows researchers to concentrate on explaining and establishing the structure of the logic correctly using their chosen tools - those embedded materials that can assist researcher to accomplish his mission (Spenser, 2007; Bilgi, kulkarni, & Spenser, 2010).

Analysis and Results

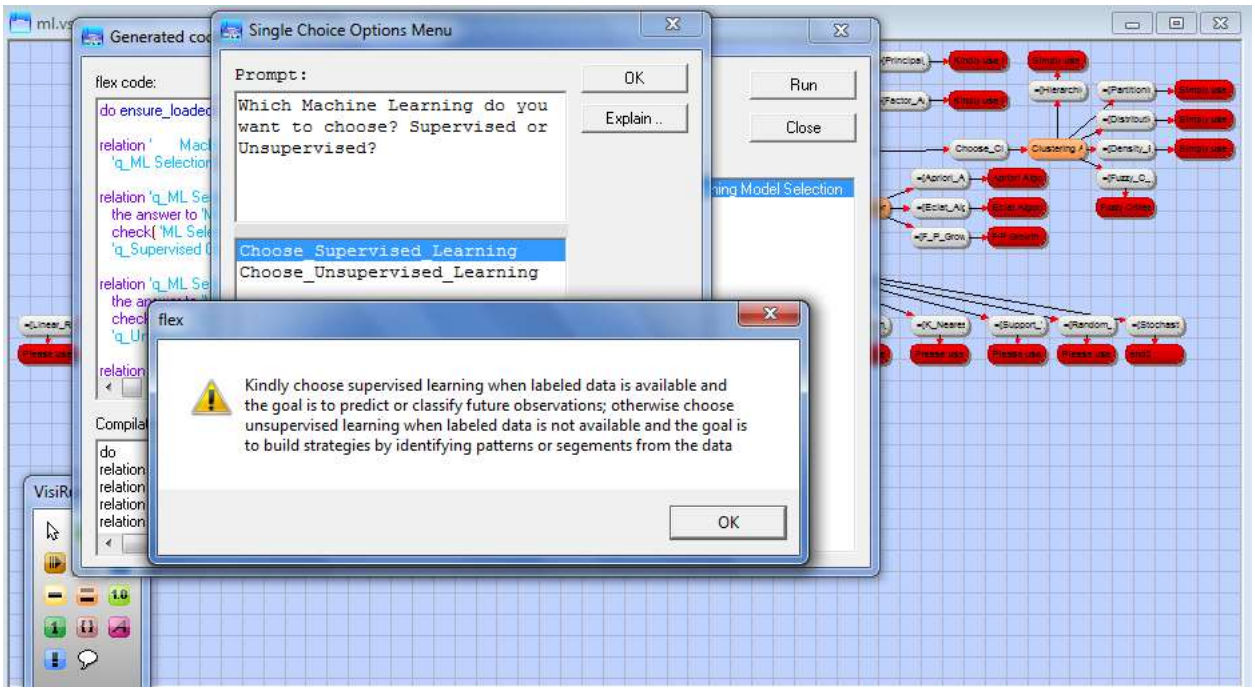

Figure 1: Visirule showing easy selection of either supervised or unsupervised machine learning

The figure 1 displays the condition to choose either supervised or unsupervised machine learning algorithm likewise it goes further to ask another question until the right decision is made on the suggestions provided by the software

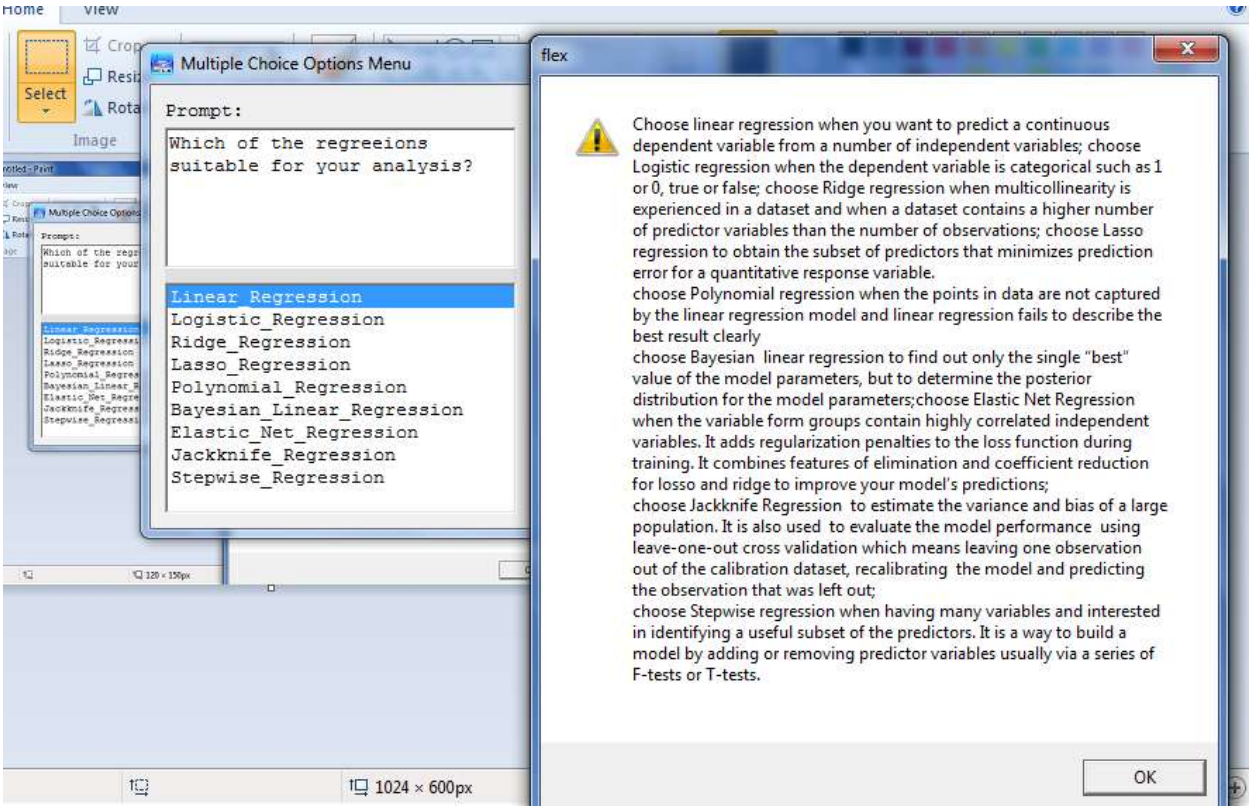

Figure 2: Visirule showing the list of regression types

The second figure (Figure 2) depicts the collection of regression analyses, from which the researcher would choose one. From the figure 2, the details of each of the types are shown at right hand side with applicable conditions for their selection

Discussion

The use of the artificial intelligent rule-based expert system showed the easy way to determine which of the algorithm to use – based on the condition of its use. The figure 1 and 2 showed the systematic procedure to best select the algorithms/model for further analysis and decision making. This approach is said to be useful and cost effective in decision making rather than manual selection method. The software as well will generate codes that can be export to the web and other format. The application of the Visirule covered both supervised and unsupervised machine learning algorithms/models

Conclusion

For years, selecting the best algorithm/model to solve a given problem has been the subject of many studies. In this paper, we have covered briefly the use of artificial intelligent rule-based expert system to select appropriate algorithm by first considering the conditions attached to the use and to select the best algorithm or group of algorithms that can perform better among others. Also, in this research paper, we have performed systematic literature review of machine learning models.

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THE NIGERIAN INDIGENOUS KNOWLEDGE AND POLITICAL SYSTEMS: A PRACTICAL APPROACH

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Abstract

Indigenous African societies shared a distinctive body of knowledge and system of politics before the arrival of the colonialist. Most of this knowledge and systems were categorically viewed and treated as primitive, superstitious, and lacked the ingredients of driving social progress by the whites hence, the imposition of western knowledge and political system. Nonetheless, centuries after, the promised development remains delusional and cynical to the indigenous people of Nigeria and Africa. This study, therefore, investigated the indigenous knowledge and political systems in Nigeria. It also reconnoitered an old question through a new lens to understand the status of the indigenous knowledge and systems in the democratizing Nigeria. The research design for this paper was purely descriptive and it relied on secondary data sources from related journal articles, textbooks, and policy documents. The Ekeh theory of two publics was used as a theoretical leaning. The study found that more than 250 indigenous societies with varying (and sometimes related) knowledge and systems existed in Nigeria. However, after decades of colonialism, neocolonialism, globalization, and interaction with foreign cultures and systems, the vestiges of the indigenous knowledge and political systems strongly identifies with the Hausa/Fulani, a centralized and somewhat autocratic socio-political system in Northern Nigeria; the Yoruba with a monarchical structure rooted in checks and balances in the West and the Igbo political system with a democratic system in the Southeastern region of the country. The study also found that the traditional (indigenous) political system has dwindled in influence and relevance and is arguably near eschewing from the Nigerian political system. This paper, therefore, recommends the decolonization of knowledge and an innovative inclusion of the indigenous knowledge and political systems into our circular polity. This will allow for decision-making that is more inclusive and culturally sensitive. Also, success stories of countries like India that have successfully integrated their indigenous knowledge to modern-day practices across sectors of their economy should be selectively adopted in Nigeria.

Keywords: indigenous knowledge, politics, Igbo, Hausa-Fulani, Yoruba

Introduction

Erstwhile to colonialism most African societies shared distinctive indigenous knowledge and systems of politics and administration. Traditional ways of life and cultural practices arising from their extant socio-environmental realities formed the basis of knowledge of their real-world as well as the sociocultural framework which reinforced social order in the society. After epochs of about 250 ethnic nationalities, with indigenous knowledge and systems, interacting with the western cultures, the vestiges of the Nigerian indigenous knowledge and political systems presently identify majorly with the Hausa/Fulani, a centralized and somewhat autocratic socio-political system of the North. The Yoruba with a monarchical structure rooted in checks and balances in the West and the Igbo political system with a democratic system in the Eastern region of the country (Adewusi, 2018; Njoku, 2001). Other indigenous people with their systems included the Kanuri, Nupe, Tiv, Efik/Ibibio, Ijaw, Ekoi, Edo, Urhobo/Isoko, and so on.

In terms of the indigenous people that formed the entity Nigeria, the country remains the most unique and complex in the world (Ezeani and Agudiegwu, 2015). About 521 indigenous languages were spoken in Nigeria. Out of which 510 are currently spoken among its indigenous people, two are now second languages without their mother-tongue speakers while nine are currently extinct (Gordon, 2005). From a sociological lens, it could be posited that Nigeria is a multi-ethnic and multi-cultural creation (Orakwe and Nwokporo, 2021). The spread of colonialism, globalization, Christianity, and Islam influenced greatly the relevance and practice of indigenous knowledge and political systems not only in Nigeria but in other less developing countries of the world. In ways unimaginable, the colonial worldview and systems of politics were imposed on the indigenous. It regarded most indigenous political systems as savage, superstitious, and primitive hence, for African societies to develop they must model their knowledge and systems after what is attainable in the western societies (Akena, 2012). These amid other factors led to loss and in some cases reduced regard to the cultural heritage of the indigenous people of Africa.

Indigenous knowledge refers to the traditional body of understanding that explained the socio-physical world and the realities of historical existing societies and their people. It includes those non-western beliefs, practices, customs, worldviews, comprising of informal forms of education (Kaya and Seleti, 2013). Studies often contrast indigenous knowledge to the dominant western body of knowledge produced in research and academic institutions (Odora-Hoppers, 2001 and 2002; Semali and Kincheloe, 1999; Cresswell, 1998; Hountondji, 1995). To Purcell (1998), it is that historically body of knowledge that was instrumental in the long-term adaptation of human groups to the biophysical environment. It is always traced to those societies or human groups that existed in history and may still exist although presently with some adjustment. It is also seen as the complex accumulation of relevant knowledge of locals which expresses their essence of ancestral knowing and legacies of diverse histories and cultures (Dei, 2008). Modern discourses on issues of knowledge especially in Africa are often hinged on decolonization of knowledge and reclaiming what was lost during the periods of western ethnocentrism. Ngugi wa Thiong'o in 1886 extensively articulated this notion in his seminar work entitled "Decolonizing the mind". To him, the African indigenous knowledge should be seen as one domain of knowledge among others and not as an alternative to the western body of knowledge (Thiong'o, 1986). This will allow for knowledge that would not make Africa and its people cynical and proffer better pathways to cultural responsiveness to sustainable development. Indigenous political system on the other hand refers to those systems of power and administration in historical Nigerian societies. It

can also be regarded as those traditional political systems practiced in different parts of Nigeria and Africa before the arrival of the colonial rulers on the coast of Africa. Nostalgically, most of these political systems had well-established principles and values with functional organs of governance which were under checks and balances. Life was crude yet relatively peaceful, devoid of massive corruption and other societal mayhem bedeviling current Nigeria. Although returning to life as it were then is not possible, Kaya and Seleti (2013) still hold that Africa's disastrous experiences of slavery, colonization, and neo-colonization have not completely eroded the African intellectual, socio-cultural, political, and spiritual heritage. It is against these backdrops that this paper investigated the indigenous body of knowledge and political systems in Nigeria and engaged a critical discourse on its relevance amid the modern democratic system of governance in Nigeria.

Theoretical framework

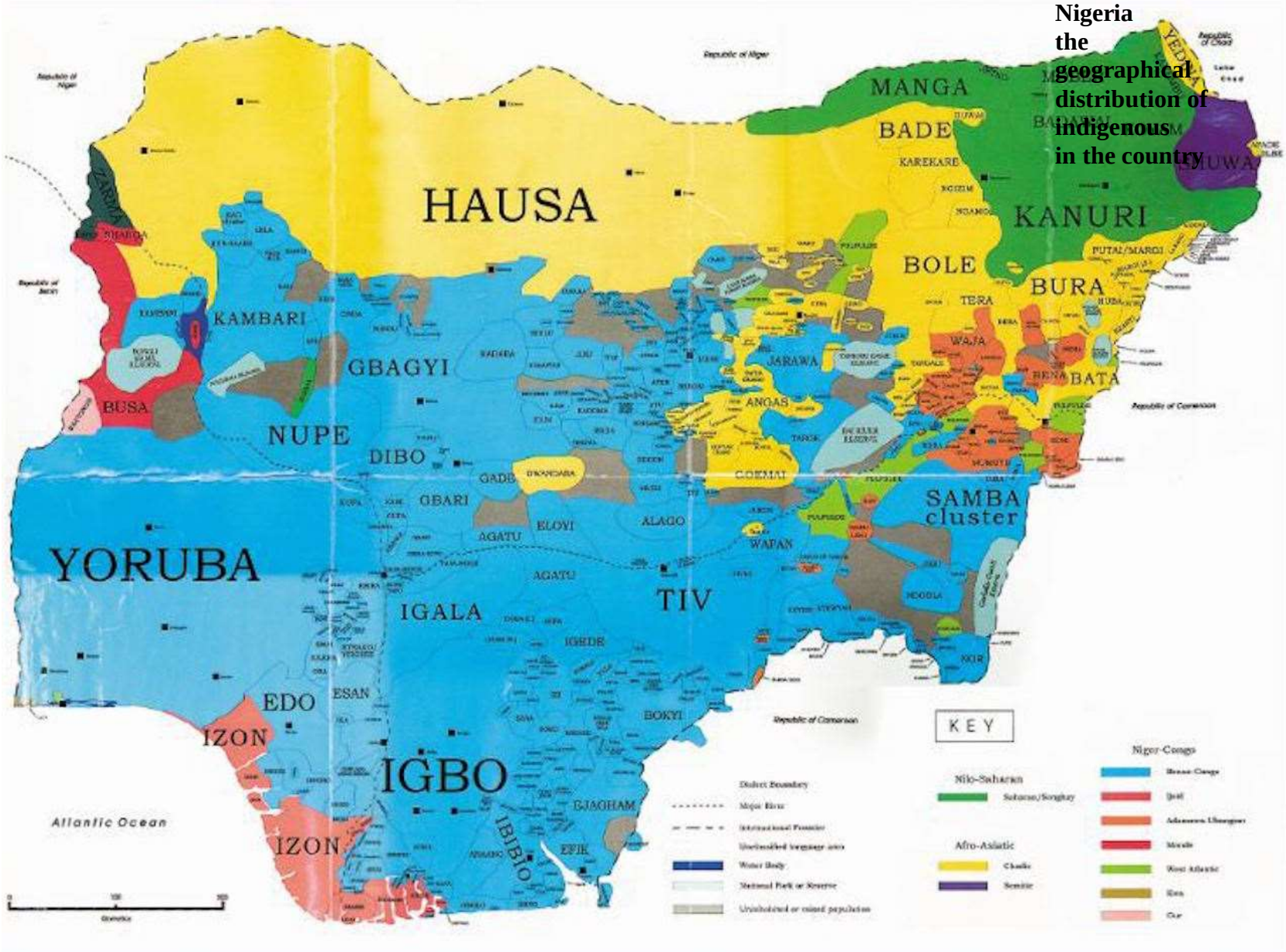
The theory of the "two publics" by Peter Ekeh was used as theoretical learning of this paper. Ekeh's 1975 seminar work entitled 'Colonialism and the two publics in Africa' postulated that the experiences of African colonialism created a somewhat new system in the post-colonial period which was quite differentiated from what we had in the indigenous African societies. To him, it led to the emergence of two separate publics unlike one public that exists in western countries (Ekeh, 1975). He identified the two publics as the civic and the primordial publics. He argued further that European countries have one realm (public) which is governed by commonly accepted values whereas Africa since post-colonialism lives with two varying realms (publics) with very much differentiated levels of morality. The civic public is seen as amoral and is featured with the group and interpersonal struggles for resources of the state while the primordial public is foundationally moral and guaranteed behavioral control through societal norms and mores (Onwuzuruigbo, 2018). In the context of this study, the modern democratized political system is viewed as the civic public while the indigenous political system is seen as the primordial public. The existence of both realms creates a competition of relevance and has resulted in the civic public dominating the indigenous political systems in Nigeria and causing them to lose the gripe of social control and order it previously provided for the indigenous people. Nonetheless, the societal decadence experienced in the modern political realm in Nigeria can be traced to this dialectics. This is because the indigenous political systems had formidable ways of bringing obedience, law, and order among its citizenry. Nonetheless, the democratic governance practiced in Nigeria is painted with corruption with virtually all institutions of the state not excluded in discourses of Nigeria as a failed state or a failing state. The Nigerian constitution as well as constitutions of other democratic systems are filled with varying levels of a lacuna. This allows for an escape route to (high class) erring members of the public as against the anticipated social and behavioral control it promises. Onyeonoru (2010) argued that the character of the parts (indigenous political systems) is in contradictory relation to the whole (the civic realm) which have made the much-needed national development elusive not only in Nigeria but in other African countries.

The Indigenous Nigerian Societies

The indigenous Nigerian societies were sparsely located and were often united through trade, religion, and marriage. They differed in knowledge and systems. However, some indigenous societies like the Hausa were forcefully subsumed into the present day Hausa-Fulani through wars of conquest as was the case during the Jihad war. Nonetheless, knowledge and political systems are not static and have continued to evolve by proffering explanations to our

emerging socio-political realities. The dialectics of human migration, trade relations, and wars have caused some indigenous societies to move away from their ancestral places of settlement. Others have risen to become multi-site indigenous people such that they are found in two or more regions of the country. Painfully, the Boko-Haram insurgency that has lasted more than a decade has also resulted in countless death and internal displacement of some indigenous people. Presently, it could be argued that some indigenous people struggle to exist in the Internal Displaced Persons (IDP) Camp around the federation.

Figure 1: Map of Nigeria showing the geographical distribution of indigenous societies in the country



Knowledge and Systems of Politics in the Indigenous Nigerian Societies

The knowledge and systems of polity differed among the indigenous societies that made up Nigeria. Nonetheless, the three most recognized would be discussed in this paper; they included the Yoruba, the Hausa-Fulani, and the Igbo Societies.

The Indigenous Yoruba Political System

The origin of the Yoruba is traced to Oduduwa who is believed to be the founder of the Yoruba Kingdom. This study will use the political system of governance in the old Oyo Empire to describe the Yoruba political system. The Yoruba political system is monarchical in nature with deep-rooted checks and balances of power (Fatile and Adejuwon, 2010). Four major organs of governance exist within the Yoruba system. The first organ was the King known as the Alaafin, who despite his supremacy was far from being a dictator. His rule is guided by the advice of the council of Oyomesi and is not under compulsion to accept all advice from the Oyomesi. He also has the constitutional right to appoint the army general. However, such an appointment must receive approval from the Oyomesi. Other positions within the systems included the Otun Efa - who is the head of Sango deity; Ona Efa - the judiciary head; Osi Efa - who was responsible for finances and other authority positions (Adewusi, 2018).

The second organ of the Old Oyo Empire is the council of Oyomesi. The council was made up of seven notable leading chiefs of the seven wards in which the metropolitan capital was divided. With the Bashorun as the head of the council, the council was to check the excesses of the king. The Bashorun also served as Prime Minister. The major assignment of the council is to elect a new king in place of a deceased king. They are also saddled with the responsibility of impeaching or removing any erring king. This is achieved by summoning the king and asking him to open an empty calabash or to open a calabash that has a parrot egg inside. This is followed by a public announcement by the Bashorun marking the rejection of the king. Nonetheless, this rejection is also subject to the confirmation of the Ogoni and upon confirmation, the Alaafin is expected to commit suicide (Fajonyomi, 1997). More so, one of the Oyomesi is expected to die with the Alaafin as a check on the powers of Oyomesi to command the Alaafin's suicide.

Ogboni, the third organ of government is also known as the earth cult. It was a secret society comprised of prominent diviners that were headed by the Oluwo. Their main duty was to check the excesses of the Oyomesi especially in the rejection of an Alaafin. They also serve as the mediator between the Oyomesi and the Alaafin. The Oluwo is also the "Ifa" chief priest and controlled the Ifa oracle. The last organ is the army organization which was under the leadership of Aare-Ona-Kakanfo. Its responsibility was to defend the territorial integrity of the empire. In cases where the army experiences defeat in war, the Aare-Ona-Kakanfo is expected to commit suicide. There have been cases where some army generals did not commit suicide instead, went on exile. A good example is Afonja. Promotions of soldiers in the army were a responsibility of the Oyomesi council. The provinces within the empire were administered by the "Obas" and "Baales" who were subordinates to the Alaafin. They collected tributes from the surrounding towns and villages and pays homage to the center.

The Indigenous Hausa-Fulani Political System

Before the Jihad war of 1804, the people regarded as the Hausa-Fulani were known as the Hausa. They occupied the Northern part of Nigeria and were divided into 14 independent kingdoms. The Othman Dan Fodio victory during the war saw the abolition of the Hausa kingdoms and the establishment of the Fulani Emirates each headed by an Emir. Sokoto and

Gwandu were headquarters of all the emirates and other Emirs of other emirates were appointed either by the Emirs of Sokoto or Gwandu or appointed by the local people subject and endorsed by either Emir of Sokoto or Gwandu. Annual tributes and allegiance are also expected from these Emirs to the two Emirs of Sokoto and Gwandu.

Administratively, the Fulani Empire was divided into two, namely the Eastern and Western parts. The Eastern part had Sokoto as its capital alongside Kano, Katsina, Zaria, Bauchi, Gombe, and Yola as political units. The Western part was made up of Ilorin, Kontagora, and Argungu with Gwandu as its capital. The eastern section was administered by Mohammed Bello, a son of Othman Dan Fodio whereas, Abdullah, a brother to Dan Fodio oversaw the western region. Nevertheless, Othman Dan Fodio was installed as the commander of the faithful known as Sarkin Muslim. He retired from politics and stayed in Sokoto. The Emirs also served as the political, administrative, and spiritual leaders (Fatile and Adejuwon, 2010). They also appointed a series of officials with designated tasks that made up the advisory council. They included: Waziri (the prime minister), Madawaki (army commander), Galadima (administrator of the capital), Sarkin Fada (head of palace workers), Sarkin Yan Doka (police chief), Maaji (overseer of the treasury), Sarkin Ruwa (officer-in-charge of butchers) and Yari (officer-in-charge of prisons) (Adewusi, 2018).

Sharia laws from the teachings of Mohammed the founder of Islam were applied for judicial administration of the emirates (Fajonyomi, 1997). The Alkali courts were presided by the Alkalis who were believed to be well trained on the principles of Islam. Cases of great importance to the emirate are often referred to the court at the headquarters which were presided over by the Emir. Courts at the Local districts are administered by the Hakimi, who is appointed by the Emir (Eroro, 2005). Districts have a number of villages that were headed by village heads who performed judicial functions at the village level. The emirates' treasury was generated from taxes. Some of these taxes included; kharaj (tax on annual yield or production), jangali (livestock or animal tax), Lizya (taxes on subjects like strangers and slaves), and zakat (taxes on movable properties to provide alms for the poor, the needy and widows).

The Indigenous Igbo Political System

The indigenous political system of the Igbo society is identified as egalitarian, stateless, and acephalous (Fadipe, 1970, Adewusi, 2018). It consisted of autonomous villages and village groups ruled through diffused authority. The basic unit of this society remained the family and governance was a shared function of the Oha-na-eze (village assembly), the council of elders, age grades, titled men, umuada, ritual priests, and so on (Erero, 2005).

The council of Elders is made up of heads of families who held the staff of authority called Ofo and the village assembly is made up of all grown-up male members of the village (Oha-na-eze). They usually convene at the village square for deliberations at the sound of the gong. It is expected that every member at the meeting expresses his views on matters of discussion and decisions are reached through consensus. The age grades are engaged in peace and order maintenance and acted as an army that waded off external attacks. They are also involved in the sanitation of the community like community cleaning and so on. The president or chairman of the council of Elders is the holder of the big Ofo who usually comes from the family known to be the senior family in the village or the eldest man among the kindred's in the village. Decisions are reached on consensus and then taken to respective families for ratification or rejection. Matters of tradition, custom, and ritual were controlled by the council while the village assembly deliberated on issues concerning the life of the villagers.

The Ozo title-holders are another group that wielded some degree of moral and political power. It is often given to the rich in the community due to the heavy spending and expensive ceremonies it requires. It also attracts respect and conferred political and moral powers on its holders on account of their wealth (Erero, 2005). The indigenous Igbo societies believed in supernatural powers, life after death, and in spirits, oracles, juju priests, and diviners influenced people's moral and social behavior by their sanctions, judgments, and predictions. The strong belief in the powers of these oracles abhorred people from harming each other. Examples of these oracles were, Ubiniukpabi at Arochukwu, Igwe-ka-ala at Umunoha in Owerri, Amadioha of Ozuzu, the Agbala of Awka, Ogbaegbu of Umuanya, Apuagbara of Umuaka in Bende and so on. In times of difficulty, these oracles were looked upon for guidance and solutions. Age grades also played a very useful political role in indigenous Igbo societies. The Ibos of Onitsha, Abo, Agbori, and so on had some form of monarchical institution, with authority figures like Eze piloting the affairs of the people.

Indigenous Political Systems in a Democratizing Nigeria: A Question of Relevance

Social changes are inevitable and ubiquitous. All hitherto indigenous systems of power, administration, and knowledge have undergone a series of significant alterations. These changes have resulted in the loss of political heritage and knowledge as well as a dearth in the relevance of indigenous political authorities in the modern pattern of power dispensation. Most indigenous societies in Nigeria were unjustly joined into one political entity known as Nigeria in the year 1914. Some scholars refer to this 1914 amalgamation as an unholy marriage which saw to the imposition of the British political system on the historical and differentiated entities that made up Nigeria (Ezeani, 2021). These have led to the undermining of indigenous cosmology and neglect of norms, values, and gendered contexts that informed morality and harmony. Also, the contemporary political system in Nigeria does not give indigenous knowledge and political systems considerable credibility (Akena, 2012).

After independence, indigenous or traditional political systems were gradually dwindling in influence and relevance. The 1960 and 1963 constitutions in Nigeria granted constitutional roles to the traditional rulers as 'Council of Chiefs' at the regional level. During the military incursion into Nigerian politics in 1966, the level at which most traditional political systems were recognized depended on whose side their supported (Orewa and Adewumi, 1983). The 1976 Local Government Reform further clarified the playground open for traditional rulers in the country. This led to the institutionalization of their advisory role in Nigerian governance. This ensured that the postulations and recommendations of most traditional rulers were not binding on the government of the local government. The 1979 constitution improved the influence of the traditional rulers into the National Council at the state level. However, this did not make provision of an administrative role rather a mere advisory on issues concerning customary law, inter-communal relations, chieftaincy, and so on. The 1999 constitution on the other hand relinquished the little relevance the traditional rulers had by denying them representation in the state council as were in the 1979 constitution. Hence, the traditional authority figures became eschewed, wielding, or exercised no constitutional political power in the country. Presently, laws concerning the traditional or indigenous political institution are made at the state level and it further provides succinctly that they provide consultative and advisory roles to the State Traditional councils where found (Garba, Jirgi, Mamman, and Abdullahi, 2018).

A look at the Nigerian history and politics since colonialism to the present, tells a story of dislocated and disintegrated indigenous political systems which have failed to synchronize effectively with the alien colonial system of governance. However, integrating the indigenous knowledge of politics into our circular practice provides the opportunities of learning

appropriate community attitudes and values for sustainable livelihood. It allows the new generation to learn more about their cultural heritage and to apply same in dealing with emerging realities of the modern world. This is because indigenous political cultures are embedded in folk stories and dramas, songs, legends, proverbs, myths, and so on (Battiste, 2002; Kaya and Seleti, 2013).

Conclusion and Recommendations

The failure of the Nigerian state to provide the much-needed development after more than 60 decades of existence has raised the secessionist agenda. Although secessionist moves are not new to the Nigerian polity the decay which the country has found itself continually reiterates the need for restructuring or seceding. Hence, most ethnic nationalities have grown so attached to its traditional culture and ways of polity with permeating approach as its savior from the unholy marriage 'Nigeria'. Painfully, the most authoritative figures of the traditional system are a pawn to the politician's game of chess steadily bending to its wills and caprices. This study recommends the decolonization of knowledge and an innovative inclusion of the indigenous knowledge and political systems into our circular polity. This will allow for decision-making that is more inclusive and culturally sensitive. Success stories of countries like India that have successfully integrated their indigenous knowledge to modern-day practices across the sectors of their economy should be selectively adopted.

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TASK-BASED TEACHING AND LEARNING-A NEW WAY OF TEACHING

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Abstract-

Task based learning is a different way to teach languages. It can help the student by placing her in a situation like in the real world. A situation where oral communication is essential for doing a specific task. Task based learning has the advantage of getting the student to use her skills at her current level, to help develop language through its use. It has the advantage of getting the focus of the student toward achieving a goal where language becomes a tool, making the use of language a necessity. This paper examines that TBL is concerned with learner and not teacher activity and it lies on the teacher to produce and supply different tasks which will give the learner the opportunity to experiment spontaneously, individually and originally with the foreign language. Each task will provide the learner with new personal experience with the foreign language and at this point the teacher has a very impor- tant part to play. He or she must take the responsibility of the consciousness raising process, which must follow the experimenting task activities.

Keywords: Task-based approach, student, activity, teacher

Introduction

Task-Based Learning (TBL) is a lesson structure, a method of sequencing activities in your lessons. Sometimes called 'Task-Based Language Teaching', TBL lessons students solve a task that involves an authentic use of language, rather than completing simple language questions about grammar or vocabulary. Task-Based Learning is a good way to get students engaged and using English. That, plus the collaborative element, builds confidence with language and social situations. It's also been shown to be more aligned with how we actually learn a language. TBL calls for a specific kind of task, one that fits these requirements: It involves meaningful communication A 'gap' between what the students know to prompt communication (e.g. they have different information, or a difference of opinion) Students can choose how to complete it, and which language they use to do so There's a clear goal, so students know when it's completed. A task could be to create a presentation, some kind of media, a piece of text, or a recorded dialogue. It could be trying to work out the solution to a practical problem, like planning a complex journey, or deducing missing information, like working out who started a rumour at school. "TASKS are activities where the target language is used by the learner for a communicative purpose (goal) in order to achieve an outcome" As defined by Willis. That means a task can be anything from doing a puzzle to making an airline reservation.

A Task-Based approach to Language

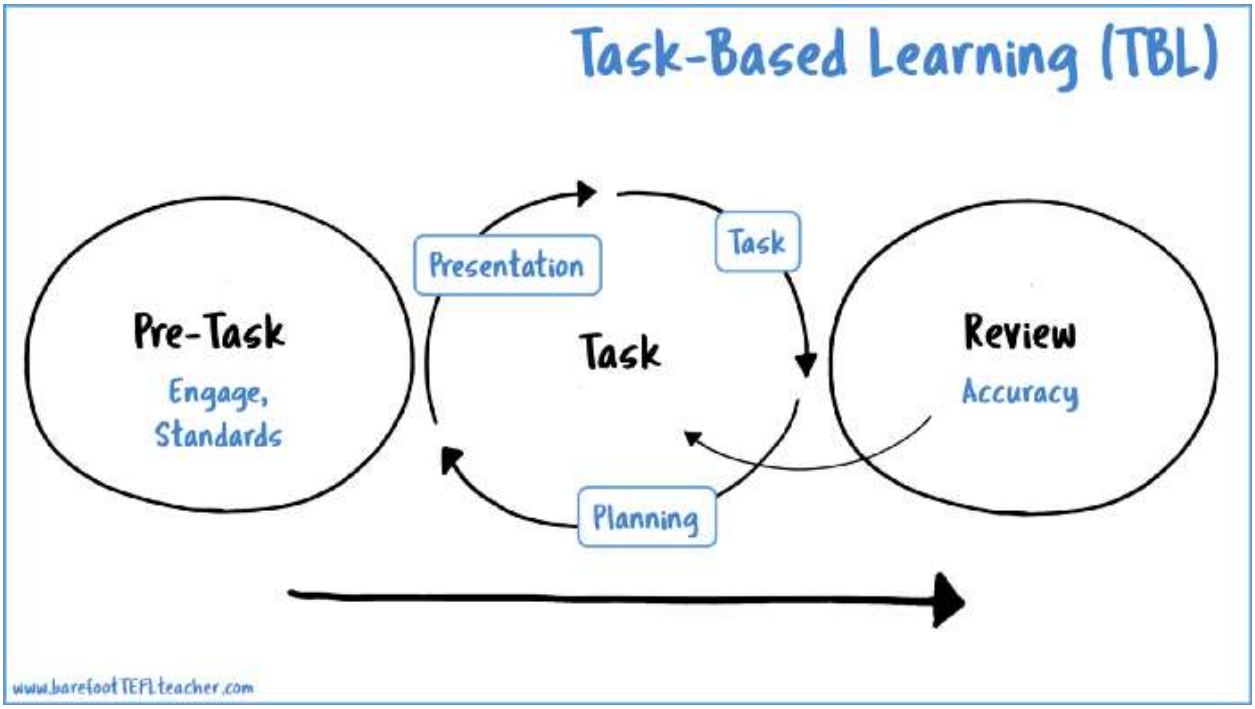
- allows for a needs analysis to be matched to identified student needs

- is supported by the research findings of classroom-centered language learning
- allows evaluation to be based on testing referring to task-based criterion
- allows for form-focussed instruction

So, we should select topics that will motivate learners, engage their attention and promote their language development as efficiently as possible.

The structural framework of TBL

Just in order to see the TBL cycle, we are enclosing the following framework:



A brief explanation about the different phases:

The pre-task phase introduces the class to the topic and the task, activating topic-related words and phrases

The task cycle offers learners the chance to use whatever language they already know in order to carry out the task, and then to improve the language, under teacher guidance, while planning their reports of the task. In the task stage the students complete the task in pairs and the teacher listens to the dialogues. Then the teacher helps to correct the com- pleted tasks in oral or written form. One of the pairs performs their dialogue in front of the class and once the task has been completed the students will hear the native speaking teachers repeat the same dialogue so they can compare it with their own.

The last phase in the framework, language focus, allows a closer study of some of the spe- cific features occurring in the language used during the task cycle.

The teaching techniques required for task-based learning are not very different from those of ordinary language teaching. The differences lie in the ordering and weighting of activities and in the fact that there is a greater amount of student activity, and less direct, up-from teaching.

What are the advantages of TBL

- Task based learning is useful for moving the focus of the learning process from the teach- er to the student.
- It gives the student a different way of understanding language as a tool instead of as a specific goal.
- It can bring teaching from abstract knowledge to real world application.
- A Task is helpful in meeting the immediate needs of the learners and provides a frame- work for creating classes, interesting and able to address to the students needs.

Issues concerning task-based learning

It is important to be aware of some pitfalls concerning the use of task-based learning. Since it encourages students to use their own langauge and vocabulary, it is neccessary for the teacher to help students expand these. Otherwise students will not learn new phrases or words by themselves, but only increase skills in using the language the student already pos- sesses.

This can also be solved by having students change who they work with, so that the stronger students can work with the students who are at a lower level. Where the stronger student should be told to focus on using more advanced words and phrases. This does not help the stronger students though, for that they will need the aid of the teacher.

Another very important thing to remember is that even though after the task cycle is complete, the learning process is not. The evaluation part is critical for the students to become selfaware of the learning they have just gone through. Put crudely there are two parts in the learning process of task-based learning of equal import. The first is to do the work and go through the tasks, the second is to get the student to think about what it is he or she has just gone through. If you the teacher do not follow up in the post task, half of the task-based learning process is wasted.

Language consciousness activities

When the groups have tried out their exercise several times with different groups, the teacher must ask for the attention in the class room again and take over the pro- cess. The teacher must now point out a group and ask the group to repeat their exercise and show each sentence on the black board. The aim is to give full attention to the language production of this particular group, to look at the sentences, the choice of words and the grammatical structures. At this point the teacher can pick out good ex- amples from the student production and can at the same time open up for specific grammatical points. Other groups can add suggestions and ask questions.

Conclusion

Looking back into the past illustrates what is really new in the TBA. The emphasis on the communicative learning or teaching of languages is not new, but it offers at least a partially different way of being exposed to and practising with the language. This leads us to classify

TBA within the 'conversational andlor natural approach' (Sánchez 1992; 1997). But new methods are not to be taken as innately good and efficient by their nature, or simply because they are new. It must be admitted that the TBA faces most of the problems inherent in natural methods, particularly when applied to adult learners of a second language. The difference between real world tasks and pedagogical tasks is at the very centre of the problem. The classroom environment cannot be equated to the real world environment, or at least not fully equated to it. In a parallel way, leaming a language in a natural environment -particularly in the early stages of life- differs considerably from leaming a language as an academic subject. The history of teaching languages offers a long list of methods to teach and learn languages. 1 am not suggesting in this paper that we should reject new proposals and novel ideas, but 1 strongly feel that what we urgently need is to do more research on the mechanisms of learning and accompany new proposals and methods with more experimental evidence before we bring them into the classroom. Abstract constructs may be well elaborated and their elements may also be logically intertwined, but something more than that is needed for them to work in practice. The TBA adds useful elements and contributes to the communicative language teaching with valuable procedures. But it would be naive to take it as 'the method' language teachers and learners have been waiting for.

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APPLYING KAHOOT! IN TEACHING AND LEARNING MATHEMATICS: AN EMPIRICAL STUDY AT VIETNAMESE HIGH SCHOOLS

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Abstract

The digital revolution has been taking place firmly in all areas of life. Especially in education, this outbreak has created many new teaching methods applying Information Technology suitable to the current context. The form of teaching by learning games is a new trend, an effective method, meeting the requirements of student-centered teaching and promoting learners' active self-discipline. This article presents an empirical study on game design using Kahoot! in teaching Mathematics for high school students in Vietnam. The study initially provides a quantitative analysis of effectiveness and feasibility, and challenges encountered when implementing the above method in the teaching process.

Keywords: Mathematics Education, Kahoot!, high school, game-based learning.

INTRODUCTION

In the 4.0 revolution, especially in the fields of Electronics - Telecommunications, Informatics and Information Technology have experienced leaps and bounds (Dung & Tri, 2021). These powerful changes have changed many philosophies, concepts, organizational methods, and activities of most fields, mainly education and training. (Abd-El-Khalick & Lederman, 2000). Therefore, innovation in education and training have been a global trend.

Felder et al. (2000) argue that with the help of information technology equipment and application software, with a lot of previous knowledge that teachers need a lot of time and effort to convey, and students have a hard time absorbing, the teaching process has become easier. This process defines the role that schools must focus on creating favorable learning opportunities and conditions for learners (Johnson et al., 2012), This requirement, on the one hand, stimulates learners to promote active learning, on the other hand requires teachers to encourage, guide and organize learning for learners to be active in acquiring knowledge and experience, and the necessary values for themselves so that they have high adaptability in approaching new teaching trends. (Allio, 2005)

Teaching is not just the transmission of knowledge, but a process of creating a relationship between the teacher, the learner, and the teaching material (Yang & Tambunan, 2021). According to Whitman (2006), people usually only remember as follows: 10% of what they read, 20% of what they hear, 80% of what they say and 90% of what they say and do. How students can still grasp the knowledge about society and the natural world in a relaxed state of mind is a matter of concern. Learning games is the most effective natural bridge between teachers and learners in solving common tasks to achieve the set goals. Applying the teaching

form of learning games is an innovative method to meet the requirements of student-centered teaching and promote the active self-discipline of learners.

According to Dellos (2015), game-based learning is considered the best practice in education. Research and empirical data show learning games as an effective tool for educators to use in the classroom to engage students in a problem-solving, critical thinking, and content review. Learning games are activities that contribute to making students excited to explore, create an atmosphere of excitement and comfort before class, or consolidate the knowledge they have learned, stimulate creative thinking and skills training.

At the scientific research level, Dellos (2015) argues that Kahoot! is one of the good sources of digital games for teaching. On the intuitive level, Wang & Lieberoth (2016) found that the sound, the score of participating in the game had a positive effect on the students' concentration and interest in learning. Stemming from the above reasons, the research team conducted an experiment in teaching Mathematics through game design using Kahoot! and make initial judgments about effectiveness.

LITERATURE REVIEW

1. Games in teaching and teaching Mathematics

Game-based teaching is an interesting method for learners but also requires high creativity of the teacher. The organization of knowledge discovery games is essentially a teaching method to raise problems or create problem situations to stimulate students' cognitive and learning activities. (Koedinger & Corbett, 2006)

A study by Koh et al. (2013) with more than 10,000 students exploring the sustainability of this approach and finding positive answers to questions like: Do teachers continue to use game design? Can they go beyond external rewards like regulatory research? After building a game, do students progress, build more games, or even simulate STEM?

With the benefits from the research on games in teaching has promoted the use of games in teaching Mathematics. There have been many studies on games in teaching Mathematics, most of which have more positive responses than traditional methods of teaching. The game makes math less hard and easier to absorb. Children learn new concepts with practice, strengthen math skills, and develop a problem-solving through games during math learning. (Ernest, 1986). Teachers' use of innovative pedagogical games and apps can be helpful for enhancing students' attitudes toward math. (Afari et al., 2013).

Games in mathematics can be motor or intellectual games, or a combination of both. But we need to distinguish between mathsematical and non-mathsematical games. Mathss games that incorporate some mathss elements. The level is gradually increased according to each class, according to the level of knowledge. In schools, mathss games can be organized as a normal teaching activity. The reality also shows that the form of organizing mathss games is highly effective and actively responded to by students. In terms of teaching purposes in general, mathss games can be: Games to guide the formation of new knowledge; Games to consolidate knowledge and practice skills; The game is intended to review and train thinking in extracurricular hours.

Ku et al. (2014) stated game-based learning is more effective than (traditional) pencil-based learning processes and these students feel more comfortable when math courses are supported by games. The study of Uğurel & Morali (2008) review mathematics taught using games and activities that increase interest, provide motivation, provide activity opportunities for engagement, and perpetuate learning by providing use all the senses in the learning process. Turgut & Temur (2017); Karakoç et al. (2020) demonstrate that teaching through games has a positive effect on students' academic achievement and their attitudes towards math. Byun &

Joung (2018) suggested that mathematics' instruction maintained by computer aided educational games has a positive effect on students learning the concept of probability.

A study by Hasan et al., (2017) at PETRONAS University of Malaysia also shows that Mathematics combined with games is a trend that helps students increase interest. This will provide an interesting and motivating strategy for students to practice the problem-solving skills they have learned through the game. Research by Ahmad & Latif (2010) found that most students think that mathematics is a difficult, complex, and confusing subject because it involves formulas and calculations. Others see math as a boring subject that is sometimes irrelevant to their real-life situations. On the other hand, conventional learning tools for learning math such as textbooks, review books, and syllabuses are not very effective in guaranteeing mastery of the subject. Therefore, Boaler & Staples (2008) believe that games are a necessary activity of students, and teachers need to know how to organize games in students, which is extremely important and has great educational significance.

If you want to organize games in teaching Mathematics, you must depend on the content and time to come up with an appropriate game. In addition, teachers need to have a plan to prepare in advance to ensure the following requirements: The game must aim at reinforcing and deepening the lesson content; the game must be suitable for the student's psychology, the instructor's ability, and the school's facilities; the form of game organization must be diverse and rich; the games help students express and develop their math skills. (Yang et al., 2021)

When organizing the game, we follow the four steps. The first step is dividing the group, naming the group, and assigning the number of members participating in the game for each group. The second step is to name the game and disseminate the rules of the game, the part and how of each member participating in the game, specifying how to score, evaluate, note violations of the rules, guide how to play by both describing and practicing (you can let students try it out). The third step is to conduct the game, call out the command decisively, the groups proceed simultaneously. Finally, summarizing the game, the teacher checks the results to evaluate, give points (comment on mistakes, correct - if any) and announce the results of the participating teams. Commenting on the results of the game, the students' attitudes, the teacher restated the knowledge learned through the game, emphasizing the mistakes that students are prone to make that need to be avoided.

2. Kahoot! - A game-based learning platform

Kahoot! is a popular and free learning support application today, based on a game and used like a classroom with interaction (Muhridza et al., 2018). In essence, Kahoot! is a website so yes it can be used on any device such as laptop, smartphone, desktop, tablet... Features that Kahoot! user support such as: Create interesting multiple-choice questions in minutes, and can add videos, images and diagrams to increase interest for users; Organized like a classroom, users will answer questions on the device while games are displayed on the secondary screen in conjunction with the main lesson; Encourage users to share their existing knowledge so that everyone can better understand the issue, as well as participate in live discussions; Assign homework to students simply by sharing a link or PIN with students. (Plump & LaRosa, 2017; Licorish et al., 2017; Licorish et al., 2018)

Kahoot! build an engaging game platform to create a fun, engaging learning environment. Kaur & Naderajan (2019) suggest that instead of the traditional way of learning by looking at textbooks, students are encouraged to look up at their devices while playing and connecting with each other. Visit the website "getKahoot!.com" and create a completely free account. Teachers can use existing quizzes to start playing with their students by visiting Kahoot!.it. Teachers can use the results to assess the skills and knowledge levels that students have received. Several studies have shown the outstanding advantages of Kahoot! such as: Helps

learners to be more interactive, can use any web browser, has a good puzzle store available from the Kahoot community! And best of all, it's completely free. (Graham, 2015). Research by Chiang, (2020) also mapped the advantages of Kahoot! is shown below:

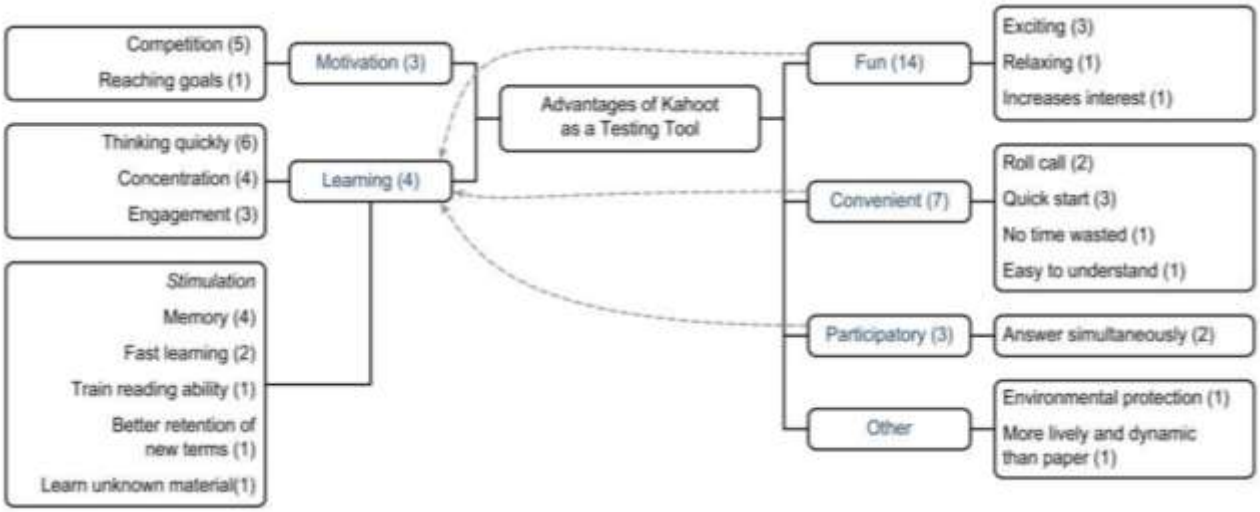

Figure 1. Advantages of Kahoot! as a testing tool (Chiang, 2020)

RESEARCH METHODOLOGY

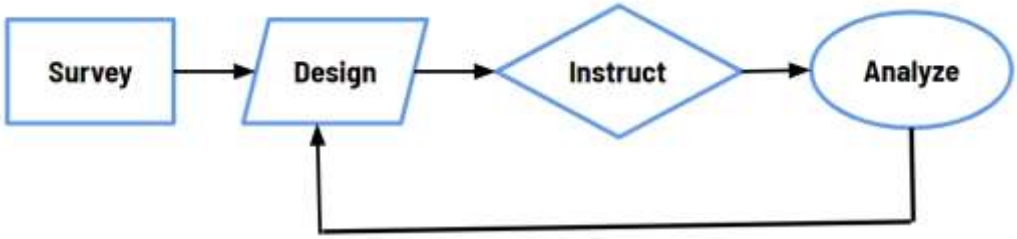

Figure 2. The Process of Applying Kahoot! to Teaching and Learning Mathematics

Step 1: Survey teachers about the use of games in teaching Mathematics

Step 2: Design a game Kahoot! with multiple-choice questions

Step 3: Experiment with the game in Kahoot! in teaching Mathematics in high schools

Step 4: Collect feedback and analyze the results

First, the study conducted a small survey for 32 teachers with five questions about the appropriateness of the organization form as well as the content of the question to serve as a premise for the design of the game Kahoot!

The next step is designing the game Kahoot! about the content of the questions in two lessons, "Dot product of two vectors and their applications" of geometry 10th-grade and lesson "Derivative" of algebra and analysis 11th-grade. The multiple-choice questions are designed in three levels: recognition, comprehension, and application. Students will access to Kahoot.it and type the teacher-provided pin to get started.

Afterwards, the research uses the game Kahoot! to reinforce the lesson from the last 10-15 minutes of each period. The teacher organizes individual, and teams play mode, dividing the group equally. When the time is up, the results of the games will be announced on the big TV screen. From there, it is possible to assess which students or groups of students absorb the lesson more effectively.

Finally, "Collect feedback and analyze the results" with survey questionnaires. This method is implemented based on the evaluation of educational products by a survey and experiment. (Mertens, 2014)

RESULTS

1. Teacher's survey results before the experiment

The survey with 5 questions coded from T1 to T5 specifically as follows:

Question T1: How long does it take for students to settle every question in Kahoot!? 37.5% of 32 teachers gave the most reasonable time as 1.5 minutes for a multiple-choice question.

Question T2: How much is a reasonable number of questions to ask when teaching Mathematics with Kahoot! in a class? 59.4% chose 5 sentences as appropriate. Another 25% of teachers chose 10 questions as a pretty good choice.

Question T3: What level of difficulty should the questions be? There are 4 levels to design a self-concept question including recognition, understanding, application and high application, called level 1,2,3,4. Survey received 56.2% chose the combination level 1,2,3; 25% choose a combination of level 1,2. Thus, depending on the nature of the activity to choose the appropriate question types at these two levels.

Question T4: What is the appropriate form to teach Math with Kahoot!? There are 53% choose by individual form and 47% choose by group form. The above ratio is quite similar the study will conduct experiments in both forms in 4 classes.

Question T5: When teaching Math with Kahoot, what time should the games be played during the lesson? (warm-up activities, new teaching activities, practice activities, knowledge expansion, consolidation activities). The results show that reinforcement activities are chosen the most with more than 66%, at the same time, activities of practice and knowledge expansion are also noticed with 19%.

2. Students' survey results after the experiment

In this study, the questionnaire consisted of 12 multiple choice questions that were referenced from previous studies such as Adnyani et al. (2020), Kaur & Nadarajan (2020) to send to 138 students in grades 10A1, 10D2, 11A2 and 11B2 after experiencing the Kahoot! at the High School Teacher Practice, Can Tho University, Vietnam with the following initial math proficiency statistics:

Table 1. Statistics on the level of mathematics in grades 10A1,10D2, 11A2, 11B2, Semester 1, school year 2019-2020.

Class	Level	Excellent	Good	Average	Poor/Weak	Total
10A1	Frequency	5	20	5	0	30
	Percentage	16,7%	66,7%	16,6%	0,0%	100%
10D2	Frequency	2	9	6	11	28
	Percentage	7%	32%	22%	39%	100%
11A2	Frequency	10	20	10	0	40
	Percentage	25%	50%	25%	0%	100%
11B2	Frequency	15	12	9	4	40

	Percentage	37%	30%	23%	10%	100%

Based on the table, class 10A1 has a relatively high ratio of good and excellent students, there are no weak students. Class 10D2 is a rather weak class in Math, with the highest percentage of weak students with 39%, the rate of excellent students with only 7%. Grade 11A2 is a good class with a high and good percentage of students, especially no students are classified as weak in Math. And class 11B2 has a good and excellent percentage of students, accounting for 67%.

Regarding question S1: In learning Mathematics, what learning methods and forms do you like teachers to use? (Presentations, conversations, group discussions and reports, use of games in teaching). Out of 138 answers, 35% chose group discussions and reports, 33% chose to use games in teaching, the rest 26% chose presentations and only 6% conversations. That shows that in addition to traditional forms of learning, students have changed when the demand for entertainment and learning is increasing. Changing the form of teaching is an inevitable part of the current teaching trend, especially the application of information technology to teaching and learning Mathematics, helping the numbers become more vivid and closer to students.

Regarding questions S2 to S4, research and survey on the level of students' agreement with the ideas shown on the board. All five questions are designed on a 5-step Likert scales to evaluate the quantitative results of the answers. The questions were coded to score as follows: Strongly disagree = 1; Disagree = 2; Neither agree nor disagree = 3; Agree = 4; Strongly agree = 5.

Table 2. Statistics table of questions S2 to S4

Code number	Content		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
S2	Teachers often use games in teaching Mathematics.	Frequency	120	10	8	-	-
		Percentage	87%	7%	6%	-	-
S3	Using games in teaching mathematics for students is necessary	Frequency	20	22	28	43	13
		Percentage	16%	18%	22%	34%	10%
S4	I feel excited when participating in games to learn mathematics.	Frequency	16	15	21	51	17
		Percentage	26%	6%	35%	33%	14%

Based on question S2, the percentage of teachers who do not use games when teaching Mathematics is currently at 87%, the media teaching form still plays a pivotal and dominant role in the process of teaching and learning Mathematics. Teachers need to change the form to increase the excitement and promote the active learning to spirit of the students. Regarding question S3, students' need to use the game is clearly demonstrated by 44% agreeing and completely agreeing. Question S4 received 47% of students feel excited about participating in the game to learn Math In fact, students are excited, Kahoot! increase emulation to achieve high results when playing.

Questions from S5 to S9 correspond to questions from T1 to T5 when surveying teachers, the study wants to compare the results of students after experiencing Kahoot! Whether the teacher's requirements are appropriate or not, specifically as follows:

Question S5: Every question in Kahoot! How long does it take for students to settle? With a sample number of 138, survey was selected by 37% for the appropriate time of 1.5 minutes and 27% for 1 minute.

Question S6: How much is a reasonably total number of questions when teaching Math with Kahoot in a class? With 37%, choosing 5 questions is the most. It can be said that, depending on the form, the time of the game taking place in the class and the level of questions will have a great impact on the number of questions.

Question S7: What level of difficulty should the questions be? Questions at level 1,2 and level 1,2,3 have the highest percentages with 27% and 25%, respectively. Notably, some students still choose questions at level 4 with 5%, which proves that the game has brought excitement and students want to challenge themselves more when participating in the game. help them have competition in learning, bring higher efficiency in the process of teaching and learning Math.

Question S8: What is the appropriate form to teach Math with Kahoot!? As a result, the ratio between the individual form and the collective form did not differ much with 49% being the ratio of the individual form and 50% being the ratio of the collective form.

Question S9: When organizing teaching Math with Kahoot!, what time should the games be played during the lesson? (warm-up activities, new teaching activities, practice activities, knowledge expansion, consolidation activities). The most chosen form is practice and knowledge expansion with 34%, the form of reinforcement is also chosen by many students with 32%.

Compared with the initial survey of teachers about time, number of questions in a game, time to implement as well as reasonable time allocation when designing games with Kahoot! the results are quite good. Similarities between teachers and students.

3. Teachers and students' interview results after the experiment

Interview study with 3 coded questions from TS1 to TS3 with 2 Math teachers and 138 students at High School Teacher Practice, Can Tho University, Vietnam. Responses were recorded and qualitative analysis was carried out using ATLAS.ti software to find out general opinions on the advantages, disadvantages as well as improvements for game design using Kahoot! More effective in the following lessons, Analysis of ideas is shown in the table below:

Table 3. Results of interviews with teachers and students

Code Number	Content	Teachers	Students
TS1	Are there advantages to students participating in games designed with Kahoot!?	+ Bustling, exciting atmosphere + Lively lesson + Effective learning.	+ Promote learning spirit. + Expand your knowledge.
TS2	Are there disadvantages when students participate in games designed with Kahoot!?	+ Equipment is not met enough such as phones, computers + Sometimes having problems with network connection + When participating in individual form will not be suitable for students with weak academic ability.	
TS3	Are there suggestions for teachers to design better games using Kahoot!?	+ Pay attention to each student's academic performance to choose questions and appropriate levels.	+ Increase thinking questions, limit calculation questions. + Change the question duration to

			match the level.

CONCLUSION

The results obtained show the use of Kahoot! Math teaching is effective and needs to be researched and widely disseminated by teachers in the teaching process. Overall, compared to other game design apps, the use of Kahoot! has many advantages such as saving more time and effort, no need to go through complicated installation steps because it supports free storage on registered accounts, easy access when needed, can share games play as well as chat online to support users in the most convenient way? The application of the teaching method by designing games using Kahoot has helped students promote their activeness and initiative in learning, enhance healthy competition among students, and further promote the values of students' mental treatment, excitement in the lessons.

To teaching methods that use Kahoot! When designing games, teachers need to carefully study the level of math proficiency, teaching content, and students' personalities, which will determine the organization of the game, the content of the questions and the duration of the questions and activities in general. Kahoot! It is not only used in Mathematics but also in many fields in life such as Physics (Asa & Gunn, 2018), Chemistry (Ares et al., 2018), Biology (ümit & Karakoyun, 2017). From a technology perspective, it is possible to access many application websites to be able to design games in teaching Mathematics such as Quizizz, Nearpod, Plickers.

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COMMON PHOBIAS AMONG CHILDREN IN PRIMARY SCHOOLS IN BANI WALID CITY

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Summary

The current study dealt with the subject of common psychological concerns in children, comparing the concerns according to a number of variables such as gender, educational attainment, and some family and personal variables, the analytical descriptive approach of the study was adopted and collected data using the test of fears (fobies) for children prepared by Mohammed Abdul Zahir Tayeb, by using the individual personal interview with each child, and the use of the projection test (drawing a person), and applied the study to a sample drawn in the simple random way of first-grade students in schools Bani Walid Public City, numbering 40 children and 7-year-old girls. The study found that the most common concerns in children are: fear of darkness, fear of high places, fear of animals, and that female children are more afraid of male children, while family variables did not show any difference in fears in children, as well as the study found that the most important characteristics of the personality of the frightened child are withdrawal behavior, lack of self-confidence, relationship disorder with parents or one of them.

Keywords: Phobia, Pathological Fears, Childhood, Fear

المخاوف المرضية الشائعة (الفوبيات) لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد

ملخص الدراسة

تناولت الدراسة الحالية موضوع المخاوف النفسية الشائعة لدى الاطفال ، والمقارنة في المخاوف بحسب عدد من المتغيرات كالجنس ، التحصيل الدراسي ، وبعض المتغيرات الاسرية والشخصية، وتم اعتماد المنهج الوصفي التحليلي للدراسة وجمعت البيانات باستخدام اختبار المخاوف (الفوبيات) للاطفال اعداد محمد عبد الظاهر الطيب ، عن طريق استخدام المقابلة الشخصية الفردية مع كل طفل ، واستخدام الاختبار الاسقاطي (رسم شخص) ، وطبقت الدراسة على عينة سحبت بالطريقة العشوائية البسيطة من الدارسين بالصف الاول الابتدائي بمدارس مدينة بني وليد العامة ، بلغ عددها 40 طفل وطفلة في عمر 7 سنوات. وتوصلت الدراسة الى ان اكثر المخاوف الشائعة لدى الاطفال هى: الخوف من الظلام ، الخوف من الاماكن العالية ، الخوف من الحيوانات ، وأن الاطفال الاناث أكثر خوفا من الاطفال الذكور ، أما المتغيرات الاسرية لم تظهر أي فرق في المخاوف لدى الاطفال ، وكذلك توصلت الدراسة الى أن أهم الخصائص المميزة لشخصية الطفل الخائف هي السلوك الانسحابي ، عدم الثقة بالنفس ، اضطراب العلاقة مع الوالدين أو احدهما.

الكلمات المفتاحية: الفوبيا ، المخاوف المرضية ، مرحلة الطفولة ، الخوف

مقدمة:

تعد مرحلة الطفولة من أهم المراحل العمرية التي يمر بها الانسان ، وأكثرها تأثيرا ، اذ تعد الاساس الذي تبني عليه بقية المراحل التالية لها ، فما يكتسبه الفرد في هذه المرحلة يظل جزء من تكوينه ومؤثر في شخصيته ، فالسبع سنوات الاولى من العمر هي التي تتكون فيها أغلب السمات الشخصية للفرد ، لذا كان الاهتمام بهذه المرحلة واضح وخاصة من قبل المختصين في مجال الصحة النفسية والنمو النفسي ، فالطفل في هذه المرحلة يتعامل مع العديد من الاشخاص والمواقف

والأشياء ، ويتم ذلك إما على نحو سوي أو على نحو غير سوي ، مما قد يسبب له العديد من الاضطرابات النفسية ، ومن بين هذه الاضطرابات التي قد تظهر في مرحلة الطفولة (المخاوف المرضية) (Phobias) ، حيث تعد من بين الاضطرابات العُصابية الاكثر شيوعا بين الاطفال في مرحلة الطفولة بصفة عامة (سوين ، 1979 :748) وهي من المشكلات التي قد يواجهها بعض الاطفال في سنين عمرهم الباكر وقد تستمر معهم بعد ذلك ، وقد تسبب لهم مشكلة في نموهم الانفعالي والاجتماعي على حد سواء اذا تركوا دون علاج ، فالمخاوف المرضية تمثل الاستجابة الُعصابية الاولى للأطفال (فينخل، 1969 ،207) وذلك ما جعل العديد من العلماء في مجال الدراسات النفسية يذهبون للاعتقاد بأن العُصاب عند الاطفال هو المخاوف المرضية ، هذا بالإضافة الى ان المخاوف المرضية تمثل نقطة البداية في كثير من الحالات العُصابية والذُهانية.

مشكلة الدراسة:

إن الخوف هو أحد المشكلات النفسية التي يعاني منها كثير من الأطفال ، وعلى الرغم من أن الخوف في إطاره الطبيعي له وظائف إيجابية في كثير من الأحيان ، إلا أنه إذا اشتدت درجته وزادت حالته تطرفاً , فإن ذلك يؤثر على الشخص تأثيرا سلبيا ينعكس في شكل اضطراب في السلوك ويترك آثاراً ضارة على الشخصية ، وهذا النوع من الخوف يطلق عليه الخوف المرضي , فالمخاوف المرضية هي جزء من مشكلات سلوكية ونفسية تشمل مجمل الحياة النفسية والاجتماعية ويحدث اضطرابات بالشخصية ، وإذا استمر الخوف المرضي دون معالجة فإن ذلك الطفل يحرم من تعلم المهارات والتفاعل مع الاقران ، وتنمية الحس الاجتماعي واكتساب المعرفة مستقبلا ، مما يُنبيء بحدوث اضطرابات عصبية وتكيف ضعيف وسلبي اتجاه المواقف والتجارب التي تتطلب تكيفا فعالا ، وبالتالي الفشل في انجاز الاعمال والمهمات التي تتطلب الاستقلالية والاعتماد على النفس والقدرات الذاتية ، وهذا النمط من الاستجابات العُصابية يتطلب تدخل المعالج النفسي السلوكي بأسرع وقت دون تباطؤ ، والباحثة من خلال هذه الدراسة تحاول إلقاء الضوء على المخاوف المرضية الشائعة لدى أطفال عمر 7 سنوات بالمدارس الابتدائية ، وربطها ببعض المتغيرات الاسرية والخصائص الشخصية للطفل ، ومن خلال ما تقدم يمكن تحديد مشكلة الدراسة في التساؤلات الاتية :

1-ما المخاوف المرضية الشائعة (الفوبيات) لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟
2-هل توجد فروق في المخاوف المرضية الشائعة (الفوبيات) حسب بعض المتغيرات الاسرية والشخصية لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟

أهمية الدراسة: تكتسب الدراسة أهميتها في :

1- أن النتائج التي تتوصل اليها قد يستفيد منها الباحثين والدارسين والعاملين والآباء والأمهات ، للتعرف على مخاوف الاطفال الشائعة بمدينة بني وليد ، وتفتح المجال لدراسات أخرى تتبني برامج علاجية وقائية وبنائية للتغلب عليها وتخفض من مستوى المخاوف.

2- أن أهمية الدراسة من أهمية موضوع المخاوف المرضية الذي يعد من المشكلات المهمة الشائعة التي يعاني منها الأطفال.
3- أهمية المرحلة العمرية التي تدرسها ، حيث أنها تهتم بمرحلة الطفولة تلك المرحلة الاساس التي تؤثر على تنظيم الشخصية ، وعليه فإن ما يتعرض له الفرد في هذه المرحلة من أزمات نفسية مختلفة تترك أثراً في شخصيته لاحقا ، بحيث تظهر في شكل اضطرابات نفسية مثل الشعور بالنقص وفقدان الثقة بالنفس، والقلق والخوف.
4- إلقاء الضوء على مشكلات الطفولة للإسهام في حلها بالتشخيص المبكر للاضطرابات النفسية وتحديد العوامل المسئولة عنها وتحديد مظاهرها ومعرفة علاقتها ببعض المتغيرات المتعلقة بالأطفال والبيئة الاجتماعية والمدرسية.
5- تثير هذه الدراسة الاهتمام لدى المعلم والمرشد المدرسي والإدارة المدرسية في تقدير حجم المشكلة.

أهداف الدراسة :
تسعى الدراسة الحالية للكشف عن :
1 -المخاوف المرضية الشائعة (الفوبيات) لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد
2 -الفروق في المخاوف المرضية حسب متغير الجنس لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد
3 - الفروق في المخاوف المرضية حسب متغير مركز الطفل في الاسرة لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد
4 - الفروق في المخاوف المرضية حسب عدد الاخوة داخل الاسرة لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد
5- الفروق في المخاوف المرضية حسب متغير تعليم الاب وتعليم الام لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد
6- الخصائص الشخصية المميزة للأطفال الذين تحصلوا على أعلى درجات في المخاوف.

تساؤلات الدراسة : عن طريق أهداف الدراسة ومن خلالها ، تم تحديد التساؤلات الاتية:

1 –ما المخاوف المرضية الشائعة (الفوبيات) لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟
2 –هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب متغير الجنس لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟
3 - هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب متغير مركز الطفل في الاسرة لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟
4 - هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب عدد الاخوة داخل الاسرة لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟
5- هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب متغير تعليم الاب وتعليم الام لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟
6- ما الخصائص الشخصية المميزة للأطفال الذين تحصلو على أعلى درجات في المخاوف؟

حدود الدراسة : اقتصرت الدراسة الحالية على الكشف عن المخاوف المرضية الشائعة (الفوبيات) لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد للعام الدراسي 2019 – 2020 ف.

مصطلحات الدراسة:

المخاوف المرضية : تعرف حسب الجمعية المصرية للطب النفسي (1979 : 73) هي خوف مبالغ فيه ، يصل حد الرعب ، من موضوع أو موقف معين ، لا يمثل في حد ذاته مصدرا للخطر ، وهذا الخوف حضاري في طبيعته ، بمعنى ان الشخص يدرك عدم معقوليته وعدم منطقيته ، ورغم ذلك فإن هذا الخوف يسيطر عليه ويحكم سلوكه.

ويعرفها **القوصي** (1988 : 403) أنها حالة انفعالية داخلية طبيعية يشعر بها الفرد في بعض المواقف ويسلك فيها سلوكا يبعده عن مصدر الضرر ، أما الخوف كثير الوقوع لاية مناسبة فيسمى خوف شاذ وكذلك تضخم الخوف في موقف ما تضخما خارجا عن النسبة المعقولة التي يتطلبها هذا الموقف ، وهذا ما يعد عادة أمرا شاذا ، ويسمي المشتغلون بالعلاج هذا الخوف الشاذ بالخوف المرضي.

وتعرفها **سهير ابراهيم** (2004 : 07) أنها حالة انفعالية داخلية طبيعية اذا ما اقترنت بالحذر فأنها تسهم في بقاء الانسان واستمراره ، أما الخوف المتكرر الوقوع هو خوف مرضي يتسم بالتضخم في موقف ما عن النسبة المعقولة التي يتطلبها الموقف.

الخوف المرضي : يعرف حسب الدليل التشخيصي والإحصائي الامريكي الرابع أنه خوف مستمر, وغير منطقي, وغير معقول من شيء معين ومحدد , أو من نشاط أو أوضاع معينة مع رغبة بتجنب واعٍ للشيء المثير للخوف, حيث إن وجود هذا الشيء أو توقع حدوثه يؤدي إلى ضيق شديد جداً, ويؤثر على حياة الإنسان, وفي معظم الحالات مايرى الشخص أن هذه المخاوف غير معقول. (DSM-IV, 2000)

التعريف الاجرائي للمخاوف المرضية : تقصد بها الباحثة انها عبارة عن نوع من المخاوف الشاذة التي لا تتناسب مع طبيعة الموقف ولا تتناسب مع عمر الطفل ، وهي المخاوف التي تسجل أعلى درجات فوق المتوسط بالنسبة لاختبار المخاوف المرضية المطبق على عينة الدراسة.

مرحلة الطفولة الوسطى: وهي المرحلة التي حددها العلماء النفس النمو فيما بين (6 – 9) من عمر الطفل ، على اعتبار أن أطفال هذه المرحلة يتميزون من الناحية الانفعالية ، بأن هذا الجانب من جوانب نموهم يواصل النمو على النحو الذي بدأ في مرحلة الطفولة المبكرة ، فتشهد مرحلة الطفولة المتوسطة بداية الاستقرار في انفعالات الطفل وثباته انفعاليا ، وتبدأ حدة الانفعالات في الزوال بصورة تدريجية ، وعندئذ يشرع الطفل في تكوين ما يسمى بالعادة الانفعالية أو العاطفية.
(ارايم وسليمان ، 2002: 98)

الدراسات السابقة :

من خلال الاطلاع علي العديد من الدراسات والبحوث والمجلات العلمية ، وجدت الباحثة العديد من الدراسات الاجنبية والعربية التي اهتمت بالمخاوف المرضية الشائعة لدى الاطفال ، وفيما يلي تستعرض الباحثة بعض الدراسات السابقة حول الموضوع ، يتم عرضها كما يأتي ذكره :

أولا : **الدراسات العربية :**

1-دراسة (داود،1982)

هدفت الدراسة إلى التحقق من الفروق بين الجنسين في المخاوف , وأجريت على (600) طالب و(600) طالبة من مدارس المرحلة المتوسطة العراقية تراوحت أعمارهم ما بين (17–12) سنة ، وتم استخدام قائمة من إعداد الباحث لمسح المخاوف للتعرف على الفروق بين الجنسين ، وتوصلت الدراسة الى وجود فروق جوهرية بين الجنسين في المخاوف , وكانت الإناث أكثر خوفاً من الذكور.

2-دراسة (العيسوي وعبد الحميد ،1989)

هدفت الدراسة إلى معرفة العلاقة ما بين مخاوف الأطفال والقلق , والتعرف على الفروق بين الجنس بين الأطفال في المتغيرات , وتألفت العينة من (100) طفل بالمرحلة الابتدائية ، (50) من الذكور و (50) من الإناث ، واستخدم الباحثان اختبار المخاوف المرضية للأطفال إعداد محمد عبد الظاهر الطيب (1980) واختبار القلق (الحالة - السمة) للأطفال ل(سبيلبرجر، 1982) وقد أسفرت النتائج عن وجود علاقة ارتباطية بين المخاوف المرضية وحالة القلق , وسمته لدى أطفال عينة البحث , بينما لم يتضح وجود فروق بين الجنسين في الحالة , بينما اتضح أن الإناث كن أكثر إظهاراً لسمة القلق والمخاوف من الذكور.

3-دراسة (عبد الحميد،1990)

هدفت الدراسة للتعرف على الفروق بين أطفال المدارس الابتدائية والأطفال من نزلاء مؤسسات الأحداث في المخاوف الشائعة وفقا لمتغير الجنس , ومدى شيوع المخاوف عند الأطفال في هاتين المجموعتين , وقد تكونت عينة الدراسة من (200) طفل ، (50) من الذكور و(50) من الإناث , والمجموعة الثانية تكونت من (100) طفل بواقع (50) من الذكور و(50) من الإناث من أطفال مؤسسات الأحداث , تراوحت أعمارهم ما بين (12-10) سنة , واستخدمت في الدراسة اختبار الخوف للأطفال (لعواطف بكر,1980) ، واختبار تفهم الموضوع لموارى (ترجمة غنيم وبرادة), وأسفرت نتائج الدراسة عن وجود فروق ذات دلالة بين تلاميذ المدارس والأطفال من نزلاء مؤسسات الأحداث في المخاوف الشائعة لصالح عينة الأحداث , بينما لم يتبين وجود فروق بين الذكور والإناث نزلاء مؤسسات الأحداث في المخاوف الشائعة , كما إتضح أن هناك فروقاً بين تلميذات المدارس وأقرانهن من فتيات الأحداث في المخاوف الشائعة المستخدمة في الدراسة لصالح فتيات المؤسسات.

4-دراسة (عبد الفتاح ،1991)

هدفت الدراسة للتعرف إلى الفروق بين الذكور والإناث في كل من المخاوف المرضية , ومفهوم الذات لدى مجموعة من الأطفال المصريين بمدارس الإمارات العربية المتحدة , وتكونت عينة الدراسة من (143)طفلاً بواقع (73) طفلاً من الذكور و(61) طفلاً من الإناث ممن تراوحت أعمارهم ما بين (13-10) سنة , واستخدم الباحث مقياس المخاوف للأطفال (لعواطف بكر،1980) ومقياس مفهوم الذات , وأسفرت نتائج الدراسة عن أن هناك فروقاً بين الجنسين لصالح الإناث , كما اتضح أن هناك علاقة ارتباطية موجبة بين كل من المخاوف , ومفهوم الذات الواقعي والمثالي , وتقبل الذات.

5-دراسة (عبد المؤمن ، 1992)

هدفت الدراسة إلى الكشف عن المخاوف المرضية لدى عينة من التلاميذ العاديين , وذوي صعوبات التعلم , والمتخلفين عقلياً من ذوي التخلف البسيط , كما هدفت إلى الكشف عن الفروق بينهم وأثر متغيري الجنس والعمر الزمني في المخاوف المرضية. وتكونت عينة الدراسة من (220) تلميذاً من الجنسين من المدارس الابتدائية وقسمت العينة إلى (80) تلميذا من الأطفال العاديين و(80) تلميذاً من الأطفال المتخلفين عقلياً ، واستخدم الباحث في الدراسة اختبار المخاوف للأطفال إعداد (عبد الظاهر الطيب،1983) وأسفرت النتائج عن وجود فروق بين التلاميذ العاديين, والتلاميذ ذوي صعوبات التعلم, والتلاميذ المتخلفين عقلياً في المخاوف لصالح الأطفال العاديين , كما اتضح عدم وجود فروق بين الجنسين في العينة الكلية من المخاوف المرضية , لكن اتضح أن هناك فروقاً ذات دلالة بين الجنسين في عينة العاديين لصالح البنين , ووجود علاقة ذات دلالة بين العمر الزمني والمخاوف المرضية لدى عينة ذوي صعوبات التعلم بينما لا توجد مثل هذه العلاقة لدى عينة العاديين , وعينة المتخلفين عقلياً والعينة الكلية

6-دراسة (حجازي،2003)

هدفت الدراسة إلى التعرف على الفروق في أعراض القلق والاكتئاب والمخاوف المرضية لدى الأطفال (12– 6) والمصابين ببعض الأمراض النفسجسمية (ربو شعبي ، عصبي ، أكزيما ، سكري) والأطفال العاديين في المملكة العربية السعودية-الرياض , وقد تكونت العينة من أربع مجموعات وتتمثل في : المجموعة الأولى: وهي مجموعة الأطفال المصابين بالربو الشعبي وعددهم (30) فرداً, والمجموعة الثانية : وهي مجموعة الأطفال المصابين بسكر الدم وعددهم (20) فرداً , والمجموعة الثالثة : وهي مجموعة الأطفال المصابين بالأكزيما وعددهم (20) فرداً , والمجموعة الرابعة : وهي مجموعة الأطفال العاديين وعددهم (23) فرداً ، وقد أسفرت النتائج على أن وجود فروق بين الأطفال العاديين ومرضى السكر في متغير المخاوف المرضية لصالح مرضى السكر, وأن هناك فروق بين الأطفال العاديين ومرضى الربو الشعبي في متغير المخاوف المرضية لصالح مرضى الربو, كما يوجد فروق بين الأطفال العاديين ومرضى الأكزيما في متغير المخاوف المرضية لصالح مرضى الأكزيما.

7-دراسة (الكشر،2005)

هدفت الدراسة لمعرفة العلاقة بين الحرمان من الأب والمخاوف الشائعة لدى لدى تلاميذ الشق الأول والثانى من مرحلة التعليم الأساسى بمدينة زليتن المحرومين من الأب الذين تتراوح أعمارهم من 9- 12 سنة ، ومعرفة دلالة الفروق في المخاوف الشائعة بين الأطفال المحرومين من الأب وغير المحرومين منه ، والمخاوف الشائعة بين الأطفال المحرومين من

الأب وفقاً لنوع الحرمان الأبوى ، والمخاوف الشائعة بين الأطفال المحرومين من الأب وفقاً لجنس الطفل ، وتكونت العينة من (235) تلميذاً وتلميذة ، منهم (105) تلميذاً و(130) تلميذة ، وتراوحت أعمارهم مابين (9- 12) سنة ، وتم استخدام قائمة المخاوف العادية للأطفال ، (إعداد:مبارك ربيع ، تقنين:عائشة أبو حجر) ، واختبار رسم الشخص ، وتوصلت الدراسة لوجود علاقة بين الحرمان الأبوى وبين ما يبديه الطفل من مخاوف فى أبعاد الخوف من الأشخاص ، المدرسة ، العقاب ، حيوانات الغابة ، حيوانات المنزل ، وموضوعات أخرى ، وعدم وجود فروق دالة إحصائية بين الأطفال المحرومين من الأب الذكور والإناث على جميع أبعاد قائمة المخاوف للأطفال.

8-دراسة (الحسن،2008)

هدفت الدراسة التعرف على درجة شيوع المخاوف المرضية لدى تلاميذ المرحلة الأساسية العليا في محافظة طولكرم, والتعرف على أثر المتغيرات (الجنس, والصف, ومكان السكن, والتحصيل الأكاديمي, والوضع الاقتصادي) على درجة شيوع المخاوف ، واستخدمت الباحثة استبانة للمخاوف المرضية من اعدادها , وطبقت الاستبانة على عينة عشوائية مكونة من) (491) تلميذا وتلميذة ، وتوصلت الدراسة إلى النتائج التالية: إن معدل درجة شيوع أنواع المخاوف المرضية كانت متوسطة بنسبة (51.82%) وأن درجات مقياس أنواع المخاوف المرضية تتباين من حيث درجة شيوعها وشدتها من الدرجة الضعيفة إلى المتوسطة فالمرتفعة. كما أظهرت النتائج وجود فروق بين متوسطات الأبعاد المتعلقة بأعراض المخاوف المرضية, حيث حيث احتل بعد المشاعر الداخلية المرتبة الأولى , فيما احتل بعد الأعراض السلوكية الظاهرية المرتبة الثانية ، واحتل البعد الثالث الأعراض الفسيولوجية المرتبة الثالثة ، وأظهرت النتائج وجود فروق لدرجة شيوع المخاوف المرضية لدى العينة تعزى لمتغيرات الجنس, والتحصيل الأكاديمي, والوضع الاقتصادي للأسرة, و عدم وجود فروق بدرجة شيوع المخاوف المرضية لديهم تعزى لمتغيري الصف, ومكان السكن.

9-دراسة (الخفاف،2015)

هدفت الدراسة للتعرف على المخاوف لدى أطفال الرياض وعلاقتها بالمتغيرات (الجنس ، التحصيل الدراسي للأب ، التحصيل الدراسي للأم) وتكونت العينة من (100) طفلا وطفلة من (10) رياض أطفال في الصف التمهيدي في رياض الأطفال الحكومية التابعة للمديرية العامة لتربية بغداد الرصافة الأولى والثانية ، وتوصلت الدراسة الى وجود مخاوف لدى أطفال عينة البحث اذ جاءت بمتوسط حسابي أكبر من المتوسط الفرضي للمقياس ، ولا توجد فروق في المخاوف حسب متغيرات الجنس، والتحصيل الدراسي للأب ، والتحصيل الدراسي للأم.

ثانيا : **الدراسات الاجنبية:**

1-دراسة أولينديك وآخرون (Ollendick & others,1991):

هدفت الدراسة إلى التعرف على العلاقة بين الخوف والقلق والاكتئاب لدى عينة من الأطفال الإنجليز, وتكونت عينة الدراسة من (237) طفلاً بواقع (158) من الذكور و(169) من الإناث تتراوح أعمارهم بين (8-10) سنوات من المدارس البريطانية من ذوي المستوى المتوسط ، وتم استخدام قائمة مسح المخاوف المعدل للأطفال إعداد أولينديك 1983 ومقياس القلق الظاهر المعدل للأطفال لرينولدز وريتشموند 1978 واستمارة الاكتئاب للأطفال لكوفاكس1981 ، أسفرت النتائج عن وجود علاقة ارتباطية بين الخوف والقلق ، وأن هناك تشابها في المخاوف السائدة بين الأطفال في كل من انجلترا وأمريكا وأستراليا..

2-دراسة جيلبيرت وآخرون (Gilbert & others,1994)

هدفت الدراسة إلى التعرف على الفروق بين الجنسين في ظهور أعراض المخاوف المرضية , وقد أجريت الدراسة على عينة من الطلاب قوامها (102) طالب بواقع (46) من الإناث و(56) من الذكور ممن تراوحت أعمارهم ما بين – 14 (11) سنة وتم اختيارهم من إحدى مدارس ولاية إلينوى الأمريكية ، وتم استخدام قائمة مسح المخاوف المعدلة للأطفال (FSS-Rوأظهرت نتائج الدراسة وجود فروق بين الجنسين في المخاوف حيث حصلت الإناث على متوسط أعلى من الذكور.

3-دراسة موريس(Muris ،1997)

هدفت الدراسة إلى الكشف عن أهم المخاوف الشائعة في مرحلة ما قبل المدرسة والتعرف على المصادر المسببة لهذه المخاوف ، تكونت عينة الدراسة من (129) طفلاً ممن تراوحت أعمارهم بين (6-12) سنة وتمت المجانسة بينهم من حيث السن والمستوى الاجتماعي للأسرة ، واستخدم الباحث مقياس مسح المخاوف للأطفال لأولينديك (1983), واستمارة المعلومات للطفل من إعداد الباحث , وذلك لجمع بيانات عن الطفل من خلال مجموعة من المعلومات السلبية والمشروطة التي تسهم في نمو المخاوف لدى الأطفال , وأسفرت نتائج الدراسة عن أن أكثر المخاوف الشائعة لدى الأطفال التي ظهرت على المقياس هي الخوف من العنكبوت الذي ارتبطت بجميع أفراد عينة الدراسة , كما اتضح عدم وجود فروق بين المجموعات الثلاث بعد التطبيق البعدي للمقياس المستخدم في الدراسة.

4-دراسة سبنس (Spenc,1997)

هدفت الدراسة الى التعرف على أعراض القلق لدى عينة من الأطفال الذين تم تشخيصهم على أنهم يعانون من أعراض القلق والمخاوف , وتكونت عينة الدراسة من (698) طفلا بالمرحلة الابتدائية من المستويات الاجتماعية والاقتصادية المتوسطة والمنخفضة ممن تراوح أعمارهم من (8-12) سنة , وقسمت العينة إلى مجموعتين (273) طفلاً من الذكور، و(

425)طفلاً من الإناث , وتم استخدام مقياس القلق للأطفال من إعداد الباحثة , وأسفرت نتائج الدراسة عن وجود ستة عوامل مرتبطة بأعراض القلق واضطراباته عند أطفال العينة التي تظهر بصورة واضحة في كل من عوامل (الهلع , والخوف من الأماكن المتسعة , والمخاوف الاجتماعية , وقلق الانفصال , والوسواس القهري , والقلق العام , والخوف من الأذى الجسدي.) كما أظهرت النتائج أن أكثر أعراض القلق شيوعاً هي الهلع والخوف من الأماكن المفتوحة , وأقلها شيوعا كان الوسواس القهري , وأن الإناث كن أكثر إظهارا للأعراض الستة المرتبطة بالقلق من الذكور.

5-دراسة تيرجون وأخرون (Turgeon & others ,1998)

هدفت الدراسة لمعرفة معدلات الانتشار وقياس الفروق ما بين الجنسين في اضطراب الخوف من الأماكن المتسعة. وتكونت عينة الدراسة من (96) أنثى و (58) ذكراً , ممن يعانون من اضطراب الهلع المصاحب للخوف من الأماكن المتسعة , وأوضحت النتائج أن الاضطراب المصاحب للخوف من الأماكن المتسعة أكثر شدة لدى الإناث.

6-دراسة موسى وأخرون (Mousa & others ,1999)

هدفت الدراسة الى التعرف على الفروق بين الأطفال المصريين في المخاوف تبعا للعمر, والجنس, والمستوى الاجتماعي , والاقتصادي للأسرة , ونوع المدرسة. وتكونت عينة الدراسة من (883) طفلا بواقع (386) من الذكور و(447) من الإناث من المدارس الحكومية و(594) من المدارس الخاصة , ممن تراوحت أعمارهم من (8-13) سنة واستخدم الباحثون مقياس المخاوف للأطفال من إعدادهم , وأسفرت النتائج عن أن الإناث أظهرن مخاوف أعلى من الذكور بالنسبة للخوف من الظلام , والحيوانات , والأماكن المتسعة , وأظهرت المجموعة الأصغر سناً مخاوف أعلى من المجموعة الأكبر سناً , كما أظهرت المجموعة الأكبر سناً في المدارس الحكومية مخاوف أكثر من أطفال المدارس الخاصة ، كما أوضحت نتائج الدراسة أن المخاوف تزداد حدتها لدى الذكور مع تقدم العمر في المدارس الحكومية وتتناقص مع التقدم في العمر مع الأطفال في المدارس الخاصة , وذلك بالنسبة للذكور والإناث في المجموعات البحثية.

تعقيب على الدراسات السابقة:

نرى من خلال سرد الدراسات التي تناولت المخاوف المرضية الشائعة للأطفال والفروق فيها حسب عدة متغيرات مختلفة حسب كل دراسة ، يتضح لنا أن أغلب الدراسات السابقة تتفق على وجود فروق في المخاوف لصالح المرضى بالأمراض النفسجسمية مقارنة بالأصحاء (حجازي،2003) ، ووجود فروق في المخاوف لصالح نزلاء مؤسسات الاحداث مقارنة مع تلاميذ المدارس (عبد الحميد،1990) ، ووجود فروق في المخاوف لدى ذوي صعوبات التعلم والمتخلفين عقيا لصالح العاديين (عبد المؤمن،1992) ، ووجود فروق في المخاوف لصالح الاكبر سنا من الاطفال (موسى،1999).

كما يتضح أن أغلب الدراسات السابقة تتفق على وجود علاقة دالة احصائيا موجبة بين المخاوف وحالة وسمة القلق (العيسوي وعبد الحميد، 1989) ، ووجود علاقة دالة احصائيا بين المخاوف ومفهوم الذات الواقعي والمثالي (عبد الفتاح، 1991) ، ووجود علاقة دالة احصائيا بين المخاوف والحرمان الابوي (دراسة الكشر،2005) ووجود علاقة بين الخوف والقلق (أوليندك،1991).

كما توصلت جُل الدراسات لوجود فروق في المخاوف لصالح عينة الاناث ، ما عدا دراسة (عبد الحميد، 1990) ودراسة (الكشر،2005) ، ودراسة (الخفاف،2015) التي توصلت لعدم وجود فروق حسب هذا المتغير ، في حين اختلفت دراسة (عبد المؤمن،1992) التي توصلت لوجود فروق في المخاوف لصالح الذكور من عينة العاديين.

منهج الدراسة وإجراءاتها:

المنهج: لتحقيق أهداف الدراسة تم اعتماد المنهج الوصفي التحليلي ، الذي يعد واحدا من المناهج العلمية الاكثر استخداما في البحوث النفسية والتربوية ، ويهدف الى تحديد أوصاف دقيقة للأنشطة والأشخاص في وضعها الذي هو عليه وإبراز جوانب معينة فيها وتحديد العلاقات التي توجد بينها ، ويزود الباحث بمعلومات تمكّن من التعليل والتفسير واتخاذ القرارات لوضع خطط ذكية لإحداث تغيرات جزئية أو أساسية من أجل التحسين والتطوير. (عاقل ، 1979: 117)

المجتمع: يتمثل مجتمع الدراسة في جميع مدارس التعليم الابتدائي بمركز مدينة بني وليد للعام الدراسي 2019 ف ، والبالغ عددها (28) مدرسة منها (14) مدرسة تعليم عام ، و(14) مدرسة تعليم خاص.

العينة: أولا: عينة المدارس: تم تحديد (4) مدارس كعينة للمدارس بالطريقة العشوائية البسيطة ، وهي المدارس: (مدرسة ابن الهيثم ، مدرسة الديار ، مدرسة الفاروق ، مدرسة بدر الكبرى)

ثانيا: عينة الأطفال : تم سحب أفراد عينة الدراسة من الاطفال الدارسين بالصف الاول من المدارس المحددة بعينة المدارس ، وقد بلغ عددهم (40) طفل ، منقسمين الى (20) ذكور ، و(20) إناث ، والجدول (1) يوضح بيانات العينة الاولية :

بيانات العينة الأولية		العدد
المدرسة	مدرسة ابن الهيثم	10
	مدرسة الديار	10
	مدرسة الفاروق	10
	مدرسة بدر الكبرى	10
الجنس	ذكور	20
	إناث	20
التحصيل	مرتفعي التحصيل	11
	منخفضي التحصيل	15
مركز الطفل بالأسرة	الطفل الاخير بالأسرة	11
	الطفل الوسط بالأسرة	15
عدد الاخوة بالأسرة	الاخوة ثلاثة أو أقل	15
	الاخوة أربعة أو أكثر	17
مستوى تعليم الاب	جامعي	10
	متوسط	20
	اخرى	10
مستوى تعليم الام	جامعي	18
	متوسط	12
	اخرى	10

أدوات الدراسة : للإجابة على تساؤلات الدراسة ، تم استخدام الادوات الاتية:

1- اختبار المخاوف (الفوبيات) للاطفال:

أ-وصف الاداة:

استخدمت الباحثة اختبار المخاوف المرضية (الفوبيات) ، علما بأن الاختبار من إعداد (الطيب ،1980) ، مكون من (20) فقرة ، مصاغ باللهجة المصرية ، وقامت الباحثة بنقله الى اللهجة الليبية الدارجة ، بحيث يتناسب ومستوى طفل في عمر 7 سنوات ، وتم تطبيق الاختبار عن طريق المقابلة الفردية مع كل طفل من أطفال العينة.

طريقة تصحيح الاختبار: يحسب لكل عبارة يجيب عنها المفحوص (بنعم) درجة واحدة ، وتجمع هذه الدرجات ، أي ان درجة المفحوص على الاختبار هي عدد مرات اجابته بنعم ويكون المجموع الكلي للدرجات معبرا على درجة المخاوف المرضية لدى الطفل المفحوص ، محسوبة من 20 درجة وهي الدرجة العظمى التي يحصل عليها المفحوص الذي يجيب عن جميع العبارات بنعم.

وقد قام المعد بحساب ثبات الاختبار بطريقة التطبيق وإعادة التطبيق ، حيث بلغ معامل ثباته بهذه الطريقة (0.91) ، واستخرج ثبات الاختبار بطريقة الاتساق الداخلي ، وقد بلغ (0.78) ، كما استخرج للاختبار الصدق الظاهري ، والصدق الذاتي ، والصدق التجريبي باستخدام (اختبار الخوف للاطفال ، اعداد عواطف عبد الوهاب 1980) كمحك خارجي ، وصدق المقارنات الطرفيه ، وكلها كانت طرق ذات مؤشرات جيدة لمعيار الصدق وتشير لقدرة الاختبار لقياس ما وُضع لأجل قياسه.

ب- حساب الصدق:

يعد الصدق من المعايير السيكومترية المهمة للحكم على قدرة أداة جمع المعلومات على قياس الهدف التي وضعت من اجله ، لذا اعتمدت الدراسة على الصدق الظاهري ، وللتحقق من ذلك عرضت الباحثة أداة الدراسة على مجموعة مكونة من (8) محكمين مختصين في علم النفس ، فقد اتفقوا على صلاحية الاختبار للتطبيق ، وبهذا أصبح الاختبار يتمتع بالصدق الظاهري.

ج- العينة الاستطلاعية:

للتأكد من مدى ملائمة الاختبار على الاطفال وفهمه من قبل أفراد عينة الدراسة المستهدفة ، قامت الباحثة بتطبيقه على عينة استطلاعية عشوائية قوامها (30) من مجتمع عينة الدراسة ، ولاحظت الباحثة أن التعليمات وفقرات المقياس واضحة بالنسبة لأفراد العينة ، وقد تمت الاستجابة على الاختبار بمتوسط زمني بلغ ربع ساعة.

د- الثبات:

من خلال العينة الاستطلاعية تم حساب ثبات الاختبار باستخدام طريقة التطبيق وإعادة التطبيق ، بفاصل زمني بلغ 14 يوما لإيجاد ثبات المقياس ، إذ بلغ معامل ثباته (0.80) مما يشير إلى أن المقياس يتمتع بقدر عال من الثبات.

وبذلك تأكد للباحثة أن الاختبار يتمتع بمؤشرات جيدة للصدق والثبات ، ومناسب لتطبيقه على عينة الدراسة المستهدفة.

2-اختبار الاسلوب الإسقاطي لرسم شخص:

الاسقاط وفقا لمفاهيم التحليل النفسي هو إلصاق ما في داخلنا من صفات أو مشاعر أو رغبات أو دوافع إلى اشياء أو أشخاص خارجيا ، فهو حيلة نفسية ينسب فيها الفرد سماته الذاتية وعواطفه وميوله لموضوعات بيئته ، وهو ميكانيزم دفاعي لاشعوري ، ويعد من أشهر الميكانزمات الدفاعية. (أحمد ، 1999: 22)

وللوقوف بطريقة غير مباشرة على خصائص الفرد وشخصيته من المكونات اللاشعورية يُلجأ للاسلوب أو الطريقة الاسقاطية ، وفي هذه الطريقة يسمح للمفحوص بل ويشجع على ان يستجيب للمثير بما لديه من أفكار أو أفعال وهي كثيرة ومتنوعه ومتميزة بالخيال الواسع ولا تتحكم فيها قواعد الصح والخطأ (جمعه، 2005 :145)

وفي هذه الدراسة للتوصل الى الخصائص الشخصية المميزة للأطفال من خلال رسوماتهم ، تم استخدام الاسلوب الاسقاطي لرسم شخص ، وتم تفسير رسوم الاطفال باعتماد طريقة كارين ماكوفر ، والتقسيم الطبوغرافي الذي طرحه عالم الخطوط ماكس بوليفر max pulver في تفسير الاختبار.

اختبار رسم الشكل الانساني (ماكوفر، 1987) :

يعتمد الاختبار على فكرة مفادها انه عندما نطلب من المفحوص ان يرسم شخصا فانه يودع في هذ الشخص اسقاطاته الذاتيه وتوتره وقلقه ، حيث تنطلق **ماكوفر** في فهمها لصورة الجسد منطلقا تحليليا صرفا ، وتستند الى مسلمة اسقاطية مفادها ان رسم شخص هو رسم يمثل التعبير عن الذات او عن موقع الجسد في المحيط البيئوي الذي يعيشه ، وبمعنى اخر فان رسم الشخص انها هو اسقاط لصورة الجسد.

طريقة اجراء الاختبار: تقدم للمفحوص ورقة بيضاء ، مع مبراة وقلم رصاص وممحاة ، على ان تقدم الورقة باتجاه طولها ، مع ترك الحرية للمفحوص كي يرسم بالاتجاه الذي يريده ، ثم نطلب من المفحوص ان يرسم شخص ما ، وهنا قد يتسائل المفحوص : أرسم رجل ام امرأة؟ ، في هذه الحالة يجيبه المفحوص ب : كما تشاء ، ومع انتهاء الرسم نعيد الكرة طالبين من المفحوص ان يرسم شخصا من الجنس الاخر (عكس الجنس المرسوم أولا)

وذلك بأن تم توزيع أوراق وأقلام على الاطفال أفراد العينة وطُلب منهم رسم شخص (رجل أو امرأة) ، والذي خالف ما طُلب منه ، كأن رسم بيت أو أي شي آخر ، مدحت الباحثة ما قام به من رسم ، وكررت عليه من جديد أن يرسم شخص.

وتم تفسير المساحه المستخدمة على ضوء علم الخطوط حسب **التقسيم الطبوغرافي** الذي طرحه لعالم الخطوط ماكس **بوليفر max pulver :**

ونختصر هذا التقسيم كما يأتي :

قام بوليفر بتقسيم المناطق الإنبنائية للمساحة المستخدمة من الورقة ، كما يأتي :

أ- المنطقة العليا : هي منطقة النشاط الذهني ، وذات دلالة في تحديد قدرة الشخص على الاتصال وقدرته على التكيف.

ب- المنطقة السفلى : تعبر عن العقل الباطن ، وكل ما هو مادي فيزيائي وعن الانتماء للجماعة.

ت- المنطقة اليمنى : الماضي والطفولة والعلاقة بالام ، وتركيز الرسم في هذه المنطقة يعكس دلائل الانطواء والميل للوحدة والانهيار.

ث- المنطقة اليُسرى : تصور المستقبل والعلاقة مع الاب كرمز للسلطة.

وهناك أربع مناطق فرعية إضافة للمناطق الرئيسية المشرحه اعلاه ، وهي المناطق:

أ- المنطقة اليمنى للأسفل : منطقة العودة للماضي (النكوص).

ب- المنطقة اليسرى الاسفل : وهي منطقة الحاجات.

ت- المنطقة اليسرى العليا : المنطقة التي تجسد فيها النشاطات والطموحات والمشاريع.

ث- المنطقة اليمنى العليا : تمثل منطقة السلبية والانكفاء.

ويُنظر الى تغطية أكبر مساحة ممكنة من الورقة في ضوء علم الخطوط بأن الشخص طموح وراغب في تأكيد ذاته.

(النابلسي وآخرون ، 1992: 52)



العمل الميداني :

استغرق العمل الميداني للدراسة الحالية أسبوعين ، منقسمين على اسبوع لتكوين جو الالفة بين الباحثة والأطفال ، والأسبوع الثاني تم اجراء المقابلة مع كل طفل لوحده ، وذلك تم على النحو الاتي:

في الاسبوع الاول : تعرفت الباحث على أسماء الاطفال ، وعرفت بنفسها لهم حيث سئلت كل منهم على اسمه وصافحته ، وقدمت لهم بعض الهدايا البسيطة ثم شاركتهم بعض الالعاب ، ثم طلبت منهم ان يختارو رسم شخص (رجل أو امرأة) ، وبذلك تم تطبيق (الاختبار الإسقاطي) ، وفي نهاية الاسبوع الاول تم جمع البيانات حول الاطفال من المرشد النفسي داخل كل مدرسة.

وبذلك كان الاسبوع الاول عبارة عن تكوين لجو الألفة والتقرب من الاطفال وانجاز أحد أداتي الدراسة والبدء في جمع المعلومات حول الاطفال.

في الاسبوع الثاني : تم استكمال جمع المعلومات حول الاطفال بالاستعانة بأولياء أمورهم والمرشد المدرسي ، ثم اجريت المقابلة مع عينة الدراسة لاختبار (المخاوف المرضية) ، وذلك بأن جلست الباحثة مع كل طفل على حدا والحديث معه على أن هناك أناس كبار يخافون من أشياء ، وهناك اطفال وصغار يخافون من أشياء وسوف اسئلك بعض الاسئلة لكي أعرف أنت من أي شي تخاف ، وبذلك تم طرح الفقرات العشرون بالاختبار والاجابة عليها من قبل الاطفال ، وبهذا تم اجراء المقابلة على عينة الدراسة ، وانتهاء العمل الميداني.

الوسائل الإحصائية : بالاستعانة بالبرنامج الإحصائي (spss) تم تحليل البيانات باستخدام الوسائل الإحصائية الآتية:

- معامل الارتباط
- المتوسط الحسابي
- الانحراف المعياري
- الاختبار التائي لعينتين مستقلتين.

النتائج ومناقشتها:

سيتم عرض النتائج التي تم التوصل إليها عن طريق المعالجات الإحصائية بعد تفريغ وتحليل استجابات العينة على اختبار المخاوف المرضية ، حسب ترتيب تساؤلات الدراسة ، يتبعها تفسيرا علميا لهذه النتائج في ضوء الأدبيات والدراسات السابقة كما يأتي :

عرض نتائج التساؤل الأول والذي نص على : (ما المخاوف المرضية الشائعة (الفوبيات) لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟)

للكشف على المخاوف المرضية الشائعة لدى أفراد العينة ، قامت الباحثة بحساب (المتوسط الحسابي) و(الانحراف المعياري) لفقرات الاختبار البالغ عددها (20) فقرة ، والجدول (2) يوضح ذلك:

ت	نص الفقرة	المتوسط	الانحراف
1	تبدا خايف هلبا لما تكون في مكان ضيق ؟	0.49	0.46
2	تحس انك خايف يجيلك مرض ما تلقاش ليه دواء؟	0.39	0.21
3	تتضايق وتخاف لما تركب سيارة أو حافلة حتى لو ماهيش معبية؟	0.53	0.46
4	تخاف هلبا لما تبدى في مكان معبى ناس؟	0.19	0.40
5	تخاف من المكانات العالية؟	0.36	0.44
6	وأنت في مكان عالي تحس بروحك بتطيح؟	0.95	0.22
7	تشعر بالخوف لما تبدى في مكان مظلم؟	0.92	0.27
8	وأنت في الظلام تحس بناس تهدرز معاك؟	0.31	0.40
9	تخاف لما يجيك النوم تمشي للسرير بروحك؟	0.43	0.42

10	تحش بالرعشة لما تبدى في الظلام؟	0.55	0.46
11	تخاف من حاجات او من ناس أنت عارف مش حيديرولك شي؟	0.26	0.44
12	تتخيل في الظلام ان في ناس مرسومة على الحيط؟	0.11	0.27
13	تحس بالخوف لما تخش لمكان فيه ناس يهدرزو؟	0.20	0.33
14	ترعش لما تشوف كلب او قطوسة؟	0.87	0.33
15	تخاف لما تبدا في دار مظلمة؟	0.97	0.16
16	تجري فيسع وقلبك يدق بسرعة لما تشبح كلب ولا قطوسة"؟	0.90	0.30
17	تخاف من الفيران وقلبك يدق فيسع لما تشبحهم؟	0.10	0.30
18	تخاف من الزقرلو وقلبك يدق فيسع لما تشبحه؟	0.15	0.36
19	تخاف هلبا لما تشبح لفعة في صورة أو تلفزيون؟	0.51	0.46
20	تخاف تمشي للحمام لما تكون بروحك في الظلام؟	0.52	0.47

وتم تحديد الربع الأعلى لرتب فقرات الاختبار بحسب متوسطها الحسابي وانحرافها المعياري ، وترتيبها تنازليًا لكي تمثل أكثر المخاوف المرضية شيوعا ، والجدول (3) يوضح ذلك:

الترتيب التنازلي	رقم الفقرة	نص الفقرة	المتوسط	الانحراف
1	15	تخاف لما تبدا في دار مظلمة؟	0.97	0.16
2	6	وأنت في مكان عالي تحس بروحك بتطيح؟	0.95	0.22
3	7	تشعر بالخوف لما تبدى في مكان مظلم؟	0.92	0.27
4	16	تجري فيسع وقلبك يدق بسرعة لما تشبح كلب ولا قطوسة"؟	0.90	0.30
5	14	ترعش لما تشوف كلب او قطوسة؟	0.87	0.33

نلاحظ من جدول الربع الاعلى للفقرات ان المخاوف المرضية الشائعة لدى افراد العينة تتمثل في الخوف من الظلام ، والخوف من الاماكن العالية ، والخوف من الحيوانات.

وبالنظر بجدول (2) نجد الفقرات المتحصلة على أقل متوسط حسابي تتمثل في الخوف من المجتمع ، الخوف من الحشرات ، الخوف لدرجة التخيل من الظلام.

أي أن **المخاوف الاكثر شيوعا** لدى عينة الدراسة هي:

1- الخوف من الظلام
2- الخوف من الاماكن العالية
3- الخوف من الحيوانات

و**المخاوف الاقل شيوعا** هي:

1- الخوف من المجتمع
2- الخوف من الحشرات والفئران

في حين نجد ان الدراسات السابقة كانت تدور المخاوف الاكثر شيوعا لدى الاطفال بعيناتها حول الخوف من الأشخاص ، المدرسة ، العقاب ، حيوانات الغابة ، حيوانات المنزل كما في دراسة دراسة (الكشر،2015) ، والخوف من الفشل , والخوف من المجهول، والخوف من الحيوانات , ومن الجروح البسيطة , والخوف من الخطر والموت كما في دراسة (أوليندك وآخرون 1991) ، والخوف من العنكبوت كما أشارت دراسة (موريس،1997) ، والخوف والهلع من الأماكن المتسعة , والمخاوف الاجتماعية , وقلق الانفصال , والوسواس القهري , والقلق العام , والخوف من الأذى الجسدي كما بدراسة (سبنس،1997) ، أما دراسة (تيرجون وأخرون،1998) أشارت لاضطراب الهلع المصاحب للخوف من الأماكن المتسعة.

وترى الباحثة ان المخاوف الشائعة لدى افراد العينة هي مخاوف يدركها الطفل : كالخوف من الظلام الذي يخاف منه حتى البالغين أحيانا ، وهو خوف يجعل الطفل يعيش في المجهول ، فلا يمكّنه من ادراك ما حوله ، ويجد نفسه وحيدا بعيدا عن أمه ، ففي الظلام تمتزج المخاوف والتي منها الخوف من الوحدة والخوف من الانفصال عن الام والخوف من غير المألوف ، وكالخوف من الاماكن العالية التي قد يكون قد وقع منها فيما مضى فالطفل كثير الوقوع والسقوط أثناء استطلاعه للبيئة وهنا يربط الطفل بين الاماكن العالية والسقوط منها والإصابة بالجروح ، أما الخوف من الحيوانات (القطط والكلاب) ، فالطفل يخاف وبشكل كبير من الحيوانات خاصة في الاعمار التي تقع بين (5 - 10) سنوات. (قطامي والرفاعي، 1989 :147) ، وقد يكون هنا للخوف من (القطط والكلاب) أصل واقعي فيما يتهدد الطفل عند مواجهاته مع القطط أو الكلاب ، حيث غالبا ما تتواجد الكلاب والقطط داخل الاحياء السكنية ، ومن جانب آخر فكثيرا ما يخوف الطفل بهذه الحيوانات لمنعه من احداث الضوضاء أو لدفعه للقيام بعمل معين أو أن يسلك سلوك حسن ، كأن يقال للطفل ان القط سيأكله ، أو سيأتي الكلب ويعضه ، إلى غير ذلك من التهديدات التي يصدقها الطفل فعلا وينشأ خائفًا منها.

أما المخاوف الاقل شيوعا لدى أفراد العينة ، فهي مخاوف لا يدركها الطفل بشكل جيد كالخوف من المجتمع ، لان مجتمع الطفل غير مخيفين في العادة بل هم مصدر الامان بالنسبة له فهم أقرانه وأبويه وأفراد عائلته ، أما الخوف من الحشرات فغالبا ما يجدها الطفل مسلية أكثر منها مصدرا للخوف خاصة وانه لا يعرفها جميعا ولا يعرف أضرارها ، والخوف من الفأر فهو صغير الحجم وغير مخيف بالنسبة للطفل ك (الكلب والقط) وبالتالي غير قادر على إيذائه ، كما لا يستخدمه الاباء في تهديداتهم الموجهة للطفل.

عرض نتائج التساؤل الثاني: والذي نص على : **(هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب متغير الجنس لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟)**

رصدت الدرجات التي تحصل عليها أفراد عينة الإناث وعينة الذكور على اختبار المخاوف ، ثم حللت البيانات إحصائيا باستخدام الاختبار التائي (t.test) لعينتين مستقلتين لمعرفة دلالة الفرق بين متوسطي درجات العينتين حيث بلغ متوسط درجات عينة الإناث (10.10) ومتوسط درجات عينة الذكور (6.90) وعند حساب الفرق بين هذين المتوسطين عند مستوى دلالة (0.05) ودرجة حرية (38) كانت قيمة (t) المحسوبة (5.61) ، كما موضح بالجدول (4) :

الفروق في المخاوف الشائعة حسب متغير الجنس	نوع العينة	عدد العينة	المتوسط الحسابي	الانحراف المعياري	درجة الحرية	درجة t المحسوبة	مستوى الدلالة
	ذكور	20	6.90	1.373	38	5.61	0.00 داله
	إناث	20	10.10	2.049			

ولقد تبين كما في الجدول أعلاه أنه توجد فروق ذات دلالة إحصائية عند مستوى دلالة (0.50) بين متوسطي درجات الذكور و الإناث في المخاوف لصالح عينة الاناث ، أي أن الاطفال الاناث أكثر خوفا من الاطفال الذكور ، وتتفق هذه النتيجة مع نتائج جُل الدراسات بوجود فروق في المخاوف لصالح عينة الاناث ، ما عدا دراسة (عبد الحميد، 1990) ودراسة (الكشر،2005) ، ودراسة (الخفاف،2015) التي توصلت لعدم وجود فروق حسب هذا المتغير ، أما دراسة (عبد المؤمن،1992) توصلت لوجود فروق في المخاوف لصالح الذكور من عينة العاديين.

وتُرجع الباحثة هذه النتيجة الى البيئة وتأثير معاييرها الثقافية ، حيث يتم تنشئة الولد على إخفاء خوفه والاتسام بالشجاعة ، والسماح للفتاة بالتعبير عن مخاوفها وتنشئتها بحيث تصبح معتمدة على الغير وسلبية وخانعة ، أي ان عامل القبول الاجتماعي يؤثر في الصبي أكثر يمنعه من الاعتراف بالخوف ، حيث يتوقع منه ان يكون أشجع وأقوى انفعاليا من الانثى ، وكذلك طبيعة المجتمع المحافظ والذي دائما يظهر حرصا كبيرا على الانثى خوفا عليها من الاعتداء (خاصة الجنسي) مما يجعل حماية الانثى هاجس من الهواجس التي لا تغادر أذهان الاباء ، وهذا غالبا ما يبدأ من الطفولة ، وهذه السلوكيات الحذرة تجاه الانثى ، غالبا ما يولد الخوف لديها ، فتنشأ أكثر خوفا من الذكر.

عرض نتائج التساؤل الثالث : والذي نص على : (هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف الشائعة حسب متغير التحصيل الدراسي لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟)

رصدت الدرجات التي تحصل عليها أفراد العينة من مجموعة مرتفعي التحصيل الدراسي ومجموعة منخفضي التحصيل الدراسي على اختبار المخاوف ، ثم حللت البيانات إحصائيا باستخدام الاختبار التائي (t.test) لعينتين مستقلتين لمعرفة دلالة الفرق بين متوسطي درجات المجموعتين عند مستوى دلالة (0.05) ، والجدول (5) يوضح ذلك :

الفروق في المخاوف الشائعه حسب متغير التحصيل الدراسي	نوع العينة	عدد العينة	المتوسط الحسابي	الانحراف المعياري	درجة الحرية	درجة t المحسوبة	مستوى الدلالة
	مرتفعي التحصيل	11	7.55	3.142	24	0.88	0.383 غير داله
	منخفضي التحصيل	15	8.60	2.874			

ولقد تبين كما في الجدول أعلاه أنه لا توجد فروق ذات دلالة إحصائية عند مستوى دلالة (0.50) بين متوسطي ذوي التحصيل المرتفع و ذوي التحصيل المنخفض في المخاوف الشائعة ، واختلفت هذه النتيجة مع نتيجة دراسة (الحسن،2008) التى قالت بوجود فروق في المخاوف حسب متغير التحصيل الاكاديمي.

عرض نتائج التساؤل الرابع : والذي نص على : (هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب متغير مركز الطفل في الاسرة لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟)

بعد جمع بيانات العينة حسب المعلومات المتوفرة تم تقسيمها الى مجموعتين : المجموعة الاولى (مركز الطفل الاخير في الاسرة) والمجموعة الثانية (مركز الطفل وسط في الاسرة) ورصدت درجاتهم على اختبار المخاوف ، ثم حللت البيانات إحصائيا باستخدام الاختبار التائي (t.test) لعينتين مستقلتين لمعرفة دلالة الفرق بين متوسطي درجات المجموعتين عند مستوى دلالة (0.05) ، والجدول (6) يوضح ذلك :

الفروق في المخاوف الشائعة حسب متغير مركز الطفل في الاسرة	نوع العينة	عدد العينة	المتوسط الحسابي	الانحراف المعياري	درجة الحرية	درجة t المحسوبة	مستوى الدلالة
	الاخير بالاسرة	11	7.73	2.936	24	0.501	0.621 غير داله
	الوسط بالاسرة	15	7.20	2.426			

ولقد تبين كما في الجدول أعلاه أنه لا توجد فروق ذات دلالة إحصائية عند مستوى دلالة (0.50) حسب مركز الطفل في الاسرة بين مركز الطفل الاخير في الاسرة ومركز الطفل وسط في الاسرة في المخاوف الشائعة ، ولم تتطرق الدراسات السابقة لمثل هذا المتغير.

وترجع الباحثة هذه النتيجة لتأثير المتغيرات الدخيلة ، لان أفراد العينة في المجموعة الثانية (مركز الطفل وسط في الاسرة) لم يتم ضبطه بشكل دقيق ، حيث كان بينهم من هو ثاني أكبر اخوته ، ومن هو مقابل الاخير ، ولا نستطيع إغفال متغير الذكر بين مجموعة الاناث والأنثى بين مجموعة الذكور داخل الاسرة ، وكذلك الفارق في السنوات بين كل طفل وآخر داخل الاسرة بالنسبة لكل طفل من أفراد العينة.

عرض نتائج التساؤل الخامس : والذي نص على **: (**هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب متغير عدد الاخوة داخل الاسرة لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟**)**

بعد جمع بيانات العينة تم حسب المعلومات المتوفرة تقسيم العينة الى مجموعتين : المجموعة الاولى (عدد الاخوة في الاسرة ثلاثة أو أقل) والمجموعة الثانية (عدد الاخوة أربعة أو أكثر في الاسرة) ، حيث كان أكبر عدد للاطفال داخل الاسرة لا يتجاوز عشرة أطفال ، وأقل عدد كان اثنان فقط، ورصدت درجات المجموعتين على اختبار المخاوف ، ثم حللت البيانات إحصائيا باستخدام الاختبار التائي (t.test) لعينتين مستقلتين لمعرفة دلالة الفرق بين متوسطي درجات المجموعتين عند مستوى دلالة (0.05) ، والجدول (7) يوضح ذلك :

الفروق في المخاوف الشائعة حسب متغير عدد الاخوة داخل الاسرة	نوع العينة	عدد العينة	المتوسط الحسابي	الانحراف المعياري	درجة الحرية	درجة t المحسوبة	مستوى الدلالة
	ثلاثة أو أقل	15	8.67	2.870	30	1.131	0.267 غير داله
	أربعة أو أكثر	17	7.59	2.526			

ولقد تبين كما في الجدول أعلاه أنه لا توجد فروق ذات دلالة إحصائية عند مستوى دلالة (0.50) بين مجموعتي (عدد الاخوة في الاسرة ثلاثة أو أقل) و(عدد الاخوة أربعة أو أكثر في الاسرة) في المخاوف الشائعة ، ولم تتطرق الدراسات السابقة لدراسة هذا المتغير.
ترى الباحثة انه -كما هو معروف- كلما قل عدد الاطفال في الاسرة كلما زادت فرصة هؤلاء الاطفال في الرعاية والاهتمام والحب من قبل الوالدين ، أما الطفل في الاسرة كثيرة عدد الاطفال قد لا يجد هذه الدرجة من الاهتمام والحب والرعاية من قبل الوالدين ، ولعل هنا يأتي دور الاب البديل والأم البديلة ، والذي غالبا ما يقوم به الاخ الاكبر والأخت الكبرى في الاسرة كثيرة العدد ، أو الجد والجدة لذا لا توجد فروق كبيرة بين الاطفال في المجموعتين.

عرض نتائج التساؤل السادس : والذي نص على **: (**هل توجد فروق ذات دلالة احصائية عند مستوى دلاله (0.05) في المخاوف المرضية حسب متغير تعليم الاب والأم لدى الاطفال بالمدارس الابتدائية بمدينة بني وليد؟**)**

عند تفريغ البيانات اتضح تباين مستوى تعليم الاب ومستوى تعليم الام داخل كل اسرة ، حيث وُجد أُسر فيها الام ذات تعليم متوسط والأب ذو تعليم ابتدائي ، وأُسر فيها الاب ذو تعليم عالي والأم ذات تعليم متوسط ، وهكذا ،لذا تم حساب الفرق على أساس متغير مستوى تعليم الاب على حدا ، والفرق على أساس مستوى تعليم الام على حدا ، حيث رصدت الدرجات التي تحصل عليها أفراد العينة على اختبار المخاوف ،بناءا على هذا التقسيم ثم حللت البيانات إحصائيا باستخدام الاختبار التائي (t.test) لعينتين مستقلتين لمعرفة دلالة الفرق بين متوسطي درجات المجموعتين عند مستوى دلالة (0.05) ، والجدول (8) يوضح ذلك :

الفروق في المخاوف الشائعة حسب متغير:	نوع العينة	عدد العينة	المتوسط الحسابي	الانحراف المعياري	درجة الحرية	درجة t المحسوبة	مستوى الدلالة
مستوى تعليم الاب	جامعي	10	7.88	2.690	35	0.564	0.576 غير داله
	متوسط	20	8.40	2.854			
مستوى تعليم الام	جامعي	18	8.47	2.632	33	1.219	0.232 غير داله
	متوسط	11	7.31	3.005			

ولقد تبين كما في الجدول أعلاه أنه لا توجد فروق ذات دلالة إحصائية عند مستوى دلالة (0.50) في المخاوف الشائعة حسب مستوى تعليم الاب ومستوى تعليم الام. أي لا توجد فروق في درجة الخوف لدى أفراد العينة راجعه لمستوى تعليم الاب ومستوى تعليم الام ، وربما يعود ذلك لعدم فاعلية مستوى التعليم في شخصية الاباء والأمهات أنفسهم ، ومن جهة آخرى فمستوى تعليم كل من الاب والأم غير متكافئ ، أي ان هذا المتغير مهمل حتى عند اختيار شريك الحياة لدى آباء أفراد العينة ، وذلك لعدم فاعليه التعليم وقلة تأثيره في شخصيات الافراد بالمجتمع ، وبالتالي حتى تربية وتنشئة أطفالهم لا تنبع من خلفية علمية وأُسس تربوية ، وإنما ترجع لتقليد آبائهم وما تشربه من العادات والتقاليد والمعايير الثقافية للمجتمع ، لذا فالطفل من أبوين متعلمين يتم تنشئته كالطفل من أبوين غير متعلمين ، والفارق الوحيد بينهما ان الاب والأم غير المتعلمين يجهلون أساليب التربية والتنشئة على أسس علمية ، والأب والأم المتعلمين يعلمون ذلك ، ولكن يعجزون عن

تطبيقه عمليا. وقد اتفقت هذه النتيجة مع دراسة (الخفاف،2015) في عدم وجود فروق في المخاوف حسب مستوى تعليم الاب والام.

عرض نتائج التساؤل السابع : والذي نص على **: (**ما الخصائص الشخصية المميزة للأطفال الذين تحصلوا على أعلى درجات في المخاوف؟**)**

تم تقسيم عدد أفراد العينه الى مجموعتين ، مجموعة سجلت أدنى درجات تحت المتوسط على اختبار المخاوف عددهم (24) طفل. ومجموعة آخرى سجلت أعلى درجات فوق المتوسط على اختبار المخاوف وبلغ عددهم (16) طفل ، وقامت الباحثة بتفسير (الاختبار الإسقاطي لرسم شخص) للمجموعتين ، معتمدة في ذلك بطريقة كارين ماكوفر والتقسيم الطبوغرافي لماكس بولفر الذي سبق وتم الاشارة له أثناء عرض أدوات الدراسة ، ومستعينة بالبيانات الاسرية لأفراد العينة ، وبملاحظات الباحثة أثناء تواجدها مع الاطفال ، ومن تحليل وتفسير رسوم الاطفال ، استخلصت الباحثة الخصائص الشخصية المميزة للأطفال الاكثر خوفا وهي كالأتي:

- الميل أكثر للانطواء والسلبية
- الميل الى عدم الثقة بالنفس
- العلاقة مع الاب أو الام غير سوية ومضطربة
- المعاناة من مشاكل مختلفة مثل : تفضيل الاخ الذكر على الانثى ، الشعور بالغيرة الناتجة من الشعور بالدونية والنقص وغيرها

وما توصلت اليه هذه النتيجة من خصائص ، تمثل خصائص الشخصية الخائفه ، فهى شخصية عديمة الثقة بالنفس ، ذات سلوك انسحابي ، انطوائي ، سلبيه ومعتمدة على الغير لكي يحميها من الشئ المخيف ، تعاني من مشاكل تتعلق باضطراب العلاقة الوالدية مع الطفل ، ينتج عنها شعور مركب من النقص والدونية.

التوصيات :

بناءً على ما سبق من عرض لنتائج الدراسة ومناقشتها ، يمكن إسداء عدة توصيات ، على النحو الآتي:

- توجيه الاباء بوسائل الاعلام والبرامج الاجتماعية بالابتعاد عن أسلوب التخويف كأسلوب للكف عن السلوك غير المرغوب فيه لدى أطفالهم ، واستخدام الترغيب وغيرها من أساليب التعزيز بدلا منه.
- توعيه الاباء والمعلمين بالأثر السيئ لأسلوب التخويف على سلوك وشخصيات الناشئة.
- اجراء دورات تدريبيه للمرشد المدرسي يشرف عليها متخصصون في علم النفس والإرشاد النفسي بكيفية التعامل مع الاطفال ذوي المشاكل السلوكية والإسهام في التقليل منها وعلاجها.
- تشجيع وتدريب الاطفال على التعبير على مخاوفهم واضطراباتهم خاصة الذكور منهم ، للتخلص من عقد ومشكلات الطفولة سريعا.
- عدم اغفال الاشارات التي يرسلها الطفل والدلالات التي تظهر من خلال رسومه ، فهو يرسم ما يشعر به حقيقة وليس ما يراه ، ورسوماته في مرحلة الطفولة لا تشير الى مهاراته بالرسم أكثر من نفسيته وشعوره ومشاعره ومكنوناته.
- الاهتمام بحصص الرسم وإطلاق حرية الرسم بحصص الرسم وعدم تقييدها بمواضيع معينة قدر الامكان ، للسماح للطفل بالتعبير عن نفسه بدون قيود.
- العمل على تطوير وتنمية البيئة المدرسية ، والاهتمام بالانشطة التربوية الترفيهية المحببة للأطفال مثل : الرحلات ، الرياضات المختلفة ، الرسم ، التربية الموسيقية.
- إرشاد المعلمين والمعلمات إلى كيفية التعامل مع التلاميذ في مختلف مراحل التعليم , وأهمية وجود علاقة تفاعلية ايجابية بين المدرس والطالب والأسرة وبناء علاقة حوارية بينهم.

المقترحات:

استكمالا للدراسة الحالية ، تقترح الباحثة إجراء عدد من الدراسات كما يأتي:

- دراسة للكشف عن المشكلات النفسية والسلوكية الشائعة لدى الأطفال.
- دراسة تكشف عن البرامج المناسبة للتعامل مع التلاميذ ذوي المخاوف المرضية من جانب المعلمين والمرشدين النفسيين بالمدارس.
- دراسة أساليب المعاملة الوالدية وعلاقتها بالمخاوف المرضية.
- دراسة أساليب تعامل المعلمات مع الاطفال وعلاقتها بالخوف لدى الاطفال

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DECISION MAKING IN THE WORLD OF ARTIFICIAL INTELLIGENCE

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Abstract

Over the years Artificial Intelligence (AI) has been gaining momentum in various business activities in leadership decision making. The development of AI is growing at a pace where the world has to move with it to function. This research paper describes "Artificial Intelligence" in the VUCA world's decision-making. Artificial Intelligence (AI) is the future of business intelligence. The survival of any business will depend upon a datacentric architecture that responds to the constant rate of change. Companies utilize AI to help make faster, more consistent, more accurate decisions by grasping n number of datasets with the help of AI. Cognitive biases, called errors, are very problematic because they cause people in business to make bad decisions once any errors occur. Mass datasets can be analyzed instantly, and these cognitive biases can be filtered from the process entirely so that every decision is made using self-evident facts. Centralized intelligence will be a part of how artificial intelligence helps with decision-making. This paper highlights the importance of AI in leadership decision-making and managerial effectiveness.

Keywords: Artificial Intelligence, Leadership decision-making, Technology, Industry 4.0, Internet of Things, Machine learning.

SOME ISSUES OF REGULATION OF THE FOOD MARKET IN AZERBAIJAN

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Abstract

Strategical role of the foodstuffs market is specified in the result of mutual (reciprocal) connection and influence of with/by a few/a number of other areas of the national economy. Essential feature of the foodstuffs market is/are that it is to provide with/by foodstuffs of the man need him (her, it) (the) basic function. Activities of the foodstuffs market agriculture is dependent (on) from production areas.
Efficient form influencing (influenced) to these processes in our modern time and methods is not of the country with/by foodstuffs in the still (yet) existing. A few/a number of measures (ceremonies) have not been created suitable conditions for (the) becoming stable for carrying out implement of the following measures (ceremonies) complete (whole).

Foreign economical connections influence improves (perfect) in the Azerbaijan Republic of the activities of the foodstuffs market big (elder, great). Food-stuffs must at the same time be guided (by) marketing other foodstuffs to (the) state support of business. Foodstuffs prevent limited being of the economical opportunities of the organizations of ownership carring (carried) out activity in area (the) production to get necessary (useful) information of connected with establishments of different economy (farm) and treatment (processing). Therefore, is necessary carry out (take away) in (the) foodstuffs markets of the creation of the foodstuffs marketing centers and such marketing monitoring of the creation of the food-stuffs marketing centers and such marketing existing changes centers with the help of the by state in (the) regions. Local foodstuffs must defend (the) interests of producers namely when state implemented (the) foreign economical activities therefore.

Measures (ceremonies) of (the) regulating moreover must be complex character, it must at the same time surround all composition parts of the food-stuffs market. Because (there) was/were provide foodstuffs danger will know (the) process regulation of the short-term this area to yield complete (whole) fruit constant. He (she, it) this is (the) principal cause that (the) activities in the circumstance (case) isolated because was not/were not possible, activities mechanisms of the areas rendering (rendered) connected service with/by production must be connectedly. He (she, it) must implement (the) politics of (the) general (the) regulating taking into account (the) activities of all areas of the national economy.

Keywords: Foodstuffs, issues of regulation, foreign economical influence

Because of its importance, the food market is a crucial sector of every country's economy in order to provide for the population's subsistence and maintain social stability.
The strategic role of the food market is determined by its interaction and influence with a number of other sectors of the national economy. The primary characteristic of the food market is that it serves to address human needs through food. Agricultural production is also crucial to the functioning of the food market.
An organizational economic examination of the country's food supply system, including the growth of the food market, indicates that effective forms and techniques of influencing these processes do not yet exist in modern times. Despite the fact that a number of stabilizing

measures have been executed, not all of the prerequisites for the execution of the following steps have been met: Use of the agro-industrial complex's current resource potential as the economic structure of the food supply chain;

- Control of the food supply process, taking into consideration the population's existing resource potential and actual consumption;

- the local agro-industrial complex's functionality

- organization of the development processes of the economic structures responsible for the country's food supply - improvement of the economic coordination mechanism of economic assets within the area structure, etc.

- The analysis demonstrates that the organizational and economic processes for the ongoing growth of the local food supply system have not yet been fully formed, indicating that strong structures are needed to address our country's food concerns. For the enhancement of the food supply system, organizational and economic systems must be addressed. It is possible to assure the smooth operation of economic assets based on economic interests in this circumstance. Simultaneously, utilizing scientific and technological advancements, it is critical to control and regulate the process of distributing food supplies to the country's population. The following conditions must be taken into account in order to determine the theoretical and practical aspects of these difficulties.

- the lack of a systematic approach to the construction of relevant organizational and economic structures, as well as the solution of the food supply problem;

- the lack of methodological opportunities to implement the conceptual situation in the regulation of the food supply process and the creation of favorable conditions for the effective functioning of economic entities

The external economic and customs tariff mechanisms should receive a lot of attention when it comes to improving the working mechanism of the food market. In this case, the harmonization procedure must take into account two possibilities. Tariff and non-tariff measures are used to regulate the primary food market. The technique of tariff import quotas and permanent import tariffs is dominant in this case. Special anti-dumping and compensation measures dominate the second alternative.

- The establishment of free market prices in a country is one of the main foundations of the market economy. It is regarded necessary to undertake the following in order to improve the functioning of the food market and boost the efficiency of its functional activity:

- the determination of free pricing based on supply and demand, as well as price control by the government as a general pricing system in the market;

- the establishment of equitable economic conditions for all food producers, independent of ownership or economic structure;

- coordination of price and financial-credit interactions in the country's agriculture industry;

- Implementation of a protection policy aimed at safeguarding the interests of local food producers in order to secure the country's food security, in accordance with Azerbaijan's WTO acceptance, etc.

Economic instruments, organizational and institutional procedures that improve the operation of the food market must be encouraged. All of this does not go against the fundamental principles of the food market's regulation structure. Given the preceding, the primary goals of regulating the operations of the food market should be to improve the supply of food items to the domestic market and to make optimal use of resource potential. According to the findings, efforts to better utilize resources and enhance the percentage of local production in the country's local food market have yielded a number of favorable outcomes.

They can be proved, for example, to preserve the country's food security, offer regional employment, improve food production investment, and so on.

In our country's agricultural food complex, there are still flaws in the development of cooperatives, purchasing, supply, sales, and marketing groups.
Furthermore, recruiting foreign capital to the production of raw materials and the processing industry in this area is a challenge.
Changes in the structure of the food market are largely to blame for current patterns in the development of the food market in modern developed countries. Forms of commerce in the food market are already emerging, based on these countries' experience.
Among the necessary issues are the expansion of relationships between food producers and public catering businesses, as well as the resolution of food sales problems through specific sales areas. The following outcomes can be obtained as a result of the steps followed to solve the problem:

- elimination of intermediaries will be achieved;
- price reductions for manufactured goods will be recorded;
- On the basis of bilateral agreements, it will be feasible to plan the volume of food production;
- necessary circumstances for non-storage of the product will be established;
- The analysis demonstrates that food market control should be done not only via economic measures, but also through institutional procedures. As a result, the construction of food marketing centers is deemed necessary.

Food marketing should be centered on boosting the sale of food goods in the food market, as well as state support for the food business, as it is a non-profit organization. Due to the restricted economic prospects available to food production businesses, they are unable to gather the necessary information on diverse farms and processing businesses. As a result, the state must build food marketing centers in the regions and use these marketing centers to monitor developments in the food markets.
Food producers can gain the essential knowledge into changes in food prices by disseminating important information.
The following tasks are ensured during the construction of food marketing mechanisms inside the institutional mechanisms of controlling the activity of the food market, according to the experience of industrialized countries:

- enhancing the competitiveness of food items and promoting their sale in both domestic and international markets;
- the use of contemporary food management techniques;
- quality control of food products produced in the regions and the center, and so forth.

Market research and analysis of the food industry;

- establishing a food market advertising policy. The products produced by the food producer can be presented to the food market and advertised in this instance, thanks to the display and electronic information exchange.

It is critical for the government to fund the costs of these procedures and to strengthen governmental support for the completion of business contracts.

- conducting local and international trainings. As a result, food producers will have a higher level of economic awareness.
- the adoption of a standardization procedure for quality control of food producers' products. Food producers will be able to release higher-quality items on the market as a result of the execution of these steps. Furthermore, based on the application of standards used by foreign food markets, successful food product implementation can be carried out in our country.

All of this could be beneficial to food producers' interests.

- Within the measures aimed at improving the mechanism of the food market in our country, the State Program "On reliable provision of the people with food products in the

Republic of Azerbaijan in 2008-2015," approved by President Ilham Aliyev's decree dated 25.08.2008, is of considerable importance.

It should be mentioned that the measures aimed at regulating the food market are primarily focused at lowering production costs and facilitating the distribution of material and technical resources to food producers under optimal conditions.

Food producers, in general, hold the most prominent position in the system under study. The sale of food goods at market prices, the employment of favorable sales channels, the establishment of consumer funds at their own expense, the payback of bank loans, the financing of large-scale reproduction, and the payment of production costs are all examples of their self-regulation.

Through the sale of the finished product and the use of agreements between the parties, the manufacturing of food products also regulates the creation and growth of institutional forms.

It should be mentioned that the food market should be regulated by the government in the following areas:

- a program that considers the impact of monopolies and competition on the food market;

It should be mentioned that the food market should be regulated by the government in the following areas:

- a program that considers the impact of monopolies and competition on the food market;

To preserve the economic interests of domestic food producers, export and import of food products are regulated by duties and other economic means.

- regulation of the tax and financial system
- regional price regulation of production and service costs, energy carriers, raw materials and processed goods, and so forth.

The notion of sensible agrarian protection must be put into practice in its entirety.

Agrarian protection is a necessary condition for ensuring food security, which is an essential component of every state's national security.

The European Union, for example, has the appropriate regulations in place to provide legal food security in countries with an agro-industrial complex.

In today's economic condition, it seems expedient to give food producers preferential credit and establish a special investment fund.

At the expense of these funds, it would be more suitable to grant loans for the implementation of specified programs and projects.

Foreign economic relations have a significant impact on the Republic of Azerbaijan's ability to improve its food market.

As a result, the government must safeguard the interests of local food producers in their economic activities.

In summary, the analysis suggests that the following steps should be made to boost the role of food security in the national economic security system and improve food market functioning:

Increasing the country's social stability and the demand for food goods among citizens;

elimination of reliance on imports in the realm of food items, as well as appropriate use of regional agricultural potential;

- in the interests of local producers, effectively balancing the structure of imports and exports on the food market in the relevant sectors;
- development of activities in the sphere of domestic agriculture and food products in the regions;
- maximizing the use of reserve resources in the construction and reinforcement of a stable food supply in the food market, and so on.

Taking into account the foregoing, food market regulation as part of the state's economic policy should encompass the medium and long term.

Furthermore, regulatory measures should be broad, encompassing all aspects of the food supply chain. Short-term regulation in this sector may not be totally effective because the process of maintaining food security is ongoing. Short-term regulation in this sector may not be totally effective because the process of maintaining food security is ongoing. The fundamental reason for this is that, because production facilities cannot operate in isolation, production-related service operation mechanisms must be integrated. The state's general regulatory policy should be executed in a way that considers the actions of all sectors of the economy.

VIRTUALIZATION AND MODELING OF SERVICES IN A SCHOOL EDUCATIONAL PLATFORM

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Abstract

With the development of the information society in the digital age, school education is faced with new requirements related to the creation of intelligent platforms in which people, digital devices and various types of objects from the physical and virtual worlds interact to provide the necessary information and services.

Cyberspace and social systems (CPSS) represent a convergence between the physical and virtual worlds, where social interactions between users are essential. In the last few years, a team from Plovdiv University has been developing a reference architectural framework for virtual physical space (ViPS), which can be adapted to different domains. The adaptation of ViPS for school education is the BLISS platform. The main task of BLISS is to provide educational services to different groups of students, which take into account the state of the virtual and physical world. BLISS is being developed as a multi-agent system in which the user's personal assistant plays a central role.

Due to the complexity of the BLISS educational space, the preliminary modelling, testing and verification of various scenarios is of key importance. The article will present an approach for modelling and virtualization of the spatial and temporal characteristics of "things" by using formal semantics of Calculus of Context-aware Ambients (CCA) and Ambients model physical, or virtual objects along with their spatial and temporal characteristics. They can be parameterized to the dynamically changing environment through the data obtained from the IoT nodes. A specialized CCA programming language (ccaPL) and its interpreter are used to test and verify the baseline scenarios.

Keywords: Cyber-Physical Social System (CPSS), Calculus of Context-aware Ambients (CCA), Interval and Temporal logic (ITL)

Introduction

The Fourth industrial revolution shares the understanding that the enormous potential of artificial intelligence, virtual reality, the connection between physical and virtual worlds, machine learning, etc. can be used to improve the quality of life (Lee J. & all, 2015, 18-23). Cyber-Physical Systems are a fusion of the physical and virtual worlds, where people, smart devices and agents interact in a unified way (Ray Raykumar & all, 2017, p.417). When the social space, in which the consumer actually lives is placed at the centre of such a system, we are already talking about the Cyber-Physical-Social system (Haisheng Yu & all, 2019, p. 528-532). The development of such CPSS spaces requires considerable effort and time. All this gives us reason to say that the process of preliminary modelling, prototyping and verification of basic services and scenarios in the developed system is crucial.

In recent years, a team from the DeLC Laboratory of Plovdiv University has developed a CPSS reference architecture called Virtual Physical Space (ViPS) (Stoyanov, S. & all, 2019). This space can be adapted to various application areas such as agriculture, tourism, smart city, healthcare, education and many others.

In the field of higher education, we are working on the development of a prototype of Virtual Educational Space (VES) (Valkanov, V. & all, 2016, p.64-76). The Covid'19 global pandemics also gave us a reason to start work on creating a CPSS space in the secondary school field, which we called BLISS (Todorov, J, 2019, p.1-5). In this article we will present our concept for modelling services and baseline scenarios in BLISS, modelling the interactions between users, software assistants and intelligent components through the formal systems of Calculus of Context-aware Ambients (CCA) (Siewe, F., Cau A. and H. Zedan. 2009) and Interval and Temporal Logic (ITL).) (Moszkowski, B., 1998, p.439-464).

BLISS. Learning space for secondary schools

BLISS is an adaptation of ViPS to support the learning process in secondary school. Due to the peculiarities of modern conditions, the system is aimed primarily at students in independent and blended learning, as well as for lifelong learning. As a CPSS system, BLISS is being developed as a multi-agent system and includes two main components. The first component is the system of personal assistants (PA) of all participants in the learning process - students, teachers, school administration and others. The second component is a school E-diary, implemented using block-chain technology.

Students receive the training materials and prepare independently, after which they take an exam. Students often have special educational needs or some disabilities that require the implementation of complex services from the physical and virtual worlds. We will look at some of them:

- **Scenario 1.** For students without disabilities: Two weeks prior to the exam the student (by his PA) will receive a notification for the incoming exam. The student will receive suggestions for study materials for the incoming exam. One week prior the exam student will receive a notification for the incoming exam. The student will receive example tests for the exam. On the day of the exam a route to the exam room will be generated and displayed on the student smart device. After submitting the exam papers, they will be reviewed and the student will receive notification from the E-diary containing the result of the exam.
- **Scenario 2.** For students in wheelchairs: Two weeks prior to the exam the student will receive a notification for the incoming exam. Students will receive suggestions for study materials for the incoming exam. One week prior the exam student will receive a notification for the incoming exam. Students will receive example tests for the exam. On the day of the exam a route to the exam room will be generated and displayed on the student smart device. System will take into consideration that the student has movement disabilities. The generated route will be most suitable for the student. The system will take into consideration elevators and doors and call/open them when the student reaches such areas. After submitting the exam papers, they will be reviewed and the student will receive notification from the school E-diary containing the result of the exam.
- **Scenario 3:** For students with visual impairments: Two weeks prior to exam the student will receive a notification for the incoming exam. Students will receive suggestions for study materials suitable for students with such disabilities for the incoming exam. One week prior the exam student will receive a notification for the

incoming exam. Students will receive example tests suitable for students with such disabilities for the exam. On the day of the exam a route to the exam room will be generated on the student smart device. System will take into consideration that the student has sight disabilities and use sound notification. The generated route will be most suitable for the student. The system will take into consideration elevators and doors and call/open them when the student reaches such areas. Additional sound notification will be used to navigate the student. After submitting the exam papers, they will be reviewed and the student will receive notification from the school E-diary containing the result of the exam.

We see that the first parts of all scenarios are similar and differ only in the type of teaching materials and tests, according to the type of student (without or with disabilities). This interaction is realized in the virtual space in the process of communication between the personal assistant of the student and the other software agents from BLISS. The physical world has its essential role on the day of the exam, when students have to move to the exam hall. We will demonstrate the process of modeling and verification of only this part of the scenarios, and for clarity we will consider only the second scenario.

Virtualization and Modelling of simple scenario

In notation Calculus of Context-aware Ambients the Ambient plays a major role. We can describe it as a limited space in which certain actions are carried out. The Ambient has a name, a boundary, and may contain other Ambients in itself, and also be included in another one. Between two Ambients there are three possible relationships: parent, child and sibling. They can communicate with each other by sending and receiving messages. The notation "::" is a symbol for sibling Ambients; "↑" and "↓" are symbols for parent and child; "<>" means sending, and "()" - receiving a message. Through Ambients we can present in a unified way different intelligent objects from the physical and virtual worlds, which is why we use them to model the processes in the CPSS space. In addition, a special programming language ccaPL has been developed, through which all modelled processes can be prototyped and interpreted **[**Mohammed H. Al-Sammarraie, 2011**].**

The wheelchair has various physical sensors that collect information about the changing parameters of the environment. We will consider the wheelchair as an Ambient, with an internal Ambient - the student's personal assistant (PA) located on his mobile device. When the wheelchair physically enters the school area, a Guard Assistant (GA) is activated, which checks the status of wheelchair-important areas such as elevators, mobile platforms, opening doors, etc. and provides information to the PA. After the student receives information from his / her PA, he / she understands on which floor and in which room the exam will be held.

The analysis of context-sensitive information in the educational space is realized through a separate module called AmbiNet, which supports services for generating plans and routes. After the PA receives information about the place and time of the exam, it sends a message to AmbiNet with a request to generate a suitable route. AmbiNet has launched a two-way communication process with the relevant GA to provide up-to-date information from the physical world. After receiving the list of currently active zones from GA, AmbiNet sends a request to a special internal component Route Generator (RG) to generate a list of suitable routes and sends it to the student's PA. As the wheelchair moves, GA tracks its location and, when a student is close to some important areas, activates sensors related to opening doors, providing an elevator, etc. If in real time one of the important areas changes its status and becomes inactive, the GA immediately informs the PA, which expects the student to choose a new route.

To describe the CCA model of this service we will use the following Ambients: PA-personal assistant; AmbiNet (the analytical subspace); RG (route generator-child Ambient of AmbiNet); GA (guard assistant); IoTN (IoT nodes in the physical world.) Let accept that the personal assistant PA received information about an exam in mathematics, which will be held in classroom 122 at 10 o'clock. The CCA processes of these Ambients can be modelled as follows:

$$P_{PA}=\begin{pmatrix}!::(exam, classroom_122, time_10).AmbiNet::< location, classroom_122, PAi > .0 \mid \\ !AmbiNet::(listRoutes).0\end{pmatrix}$$

$$P_{AmbiNet}=\begin{pmatrix}!PA::(location, classroom_122, PAi).GA::< location, classroom_122, PAi > .0 \mid \\ GA::(listIZ, PAi).RG\downarrow< location, classroom_122, listIZ, PAi > .0 \mid \\ RG\downarrow(listRoutes, PAi).PA < listRoutes > .0\end{pmatrix}$$

$$P_{RG}=\begin{pmatrix}!AmbiNet\uparrow(location, classroom122, listIZ, PAi). \\ !AmbiNet\uparrow< listRoutes, PAi > .0\end{pmatrix}$$

$$P_{GA}=\begin{pmatrix}!AmbiNet::(location, classroom_122, PAi).IoTN::< PAi > .0 \mid \\ IoTN::(listIZ, PAi).AmbiNet::< listIZ, PAi > .0\end{pmatrix}$$

$$P_{IoTN}=(!GA::(PAi).GA::< listIZ, PAi > .0)$$

The testing and verification of the CCA-model in the ccaPL environment allows tracking the interactions of the participating Ambients. The animator, developed as an additional module, allows the visualization of the processes of the participating Ambients and their current location. The processes of all the Ambients involved in the scenario can be traced for each step of the scenario, which allows to identify inconsistencies, errors and inaccuracies (Figure 1).

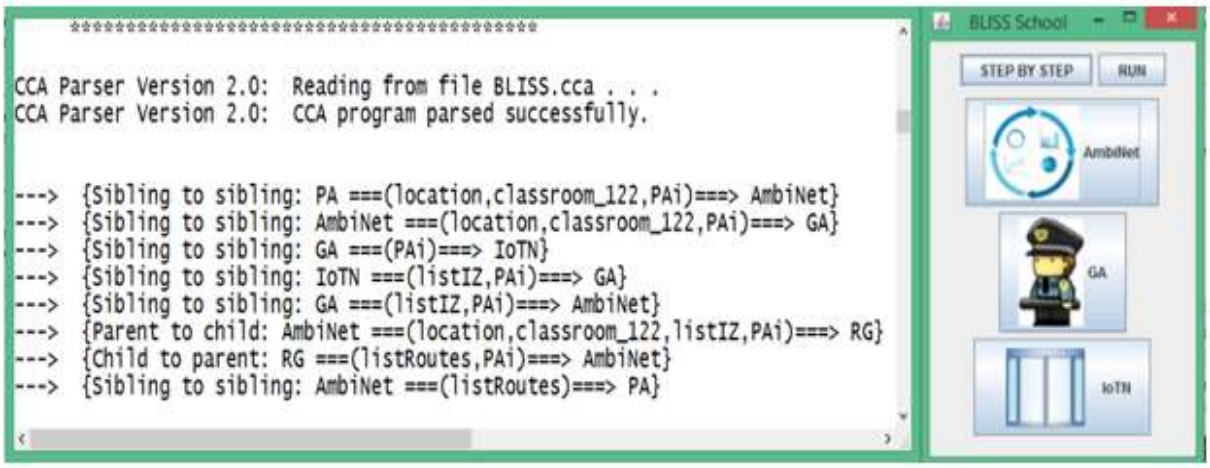

Figure 1. Testing and verification of simple scenario by ccaPL Interpreter and Animator

According to their specifics, CPSS spaces require continuous processing of the temporal aspects of the objects in the physical and virtual space. This information serves as a basis for predicting the behavior of the system, modeling and drawing up plans and scenarios in the preliminary preparation stage or for understanding events that have already occurred. Interval Temporal Logic (ITL) is a flexible notation that defines and models time-dependent processes. ITL is suitable for presenting and modeling both sequential and parallel processes. It offers powerful and scalable specification and verification techniques by arguing properties such as security, vitality, time planning, and more. The formal semantics of ITL is described in a specific logical language, for which different interpreters have been created - Tempura, jTempura, AjTempura (Valkanov, V. & all, 2014, p.427-435). Interpreters are an executable

subset of ITL that uses ITL syntax and is based on its basic philosophy of perceiving time as a finite sequence of states, comparing significant variables to each state to represent the attributes or properties we are interested in.

Let's model some exemplary states that some of the Ambients in the scenario described above will go through.

- **State 0:** School is open. PA is in current state. AmbiNet is in current state
- **State 1:** School remains in current state. PA remains in current state. AmbiNet is activated.
- **State 2:** School remains in current state. PA will enter in the school. remains in current state.
- **State 3:** School remains in current state. PA remains in current state. AmbiNet remains in current state.
- **State 4:** School remains in current state. PA asks AmbiNet for additional information. Ambinet remains in current state, etc.

All states and processes are described in the logical programming language Tempura, part of which we see below.

```
define school() = {exists School, Student, Qtime, AmbiNet, Timer:
{School = s_closed and list(Student, nstudents) and stable(struct(Student))
 and (forall i<nstudents: Student[i] = outside) and
 list(Qtime, nstudents) and stable(struct(Qtime)) and
 forall i<nstudents: {list(Qtime[i], nAmbiNet) and stable(struct(Qtime[i]))} and
 (forall i<nstudents : (forall j<nAmbiNet : Qtime[i][j] = notthere)) and
  list(AmbiNet, nAmbiNet) and stable(struct(AmbiNet))
  and (forall j<ntp:AmbiNet[j] = AmbiNet_not_active)
  and Timer = 0 and school_open() and
  (forall i<nstudents: student_idle(i)) and …
set print_states=true.
```

The Tempura interpreter visualizes the actions of the Ambients in the individual states and allows the processes to be tested, verified and corrected at the stage of preliminary modeling.

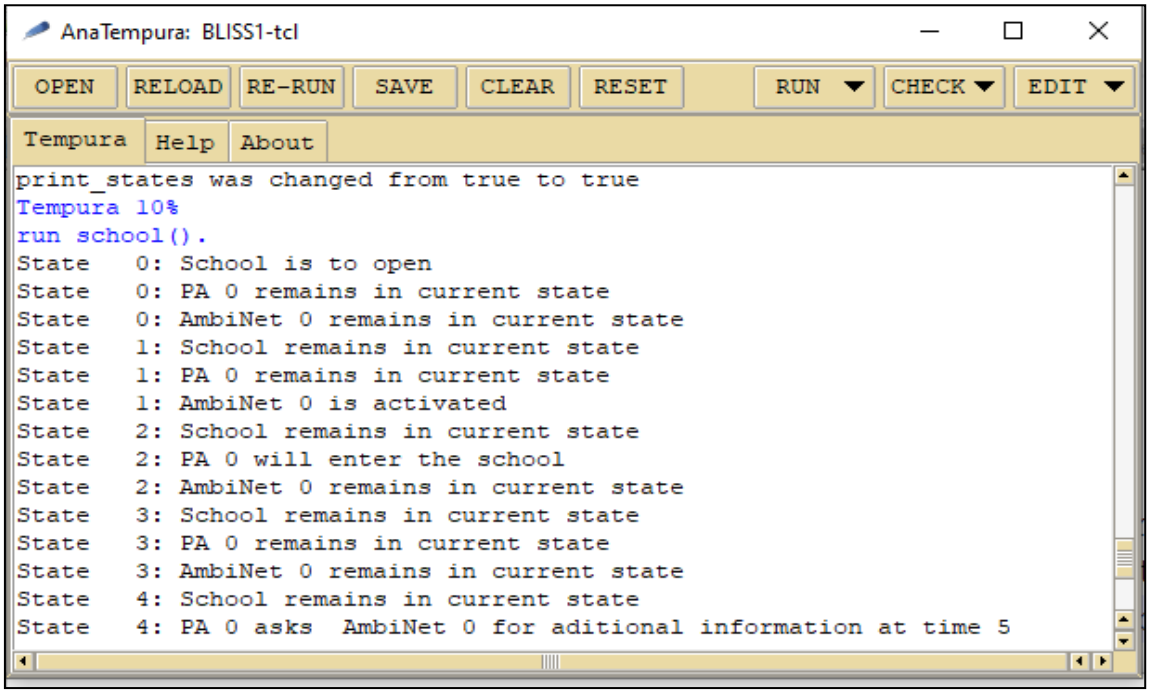

Figure 2. Modelling and verification of temporal aspects of Ambients in Tempura Interpreter

Discussion

Ambients virtualize objects in cyberspace. With their help, physical and virtual objects can be presented in a unified way in their context-dependence and dynamism. Ambients can "move" in CPSS and become part of or include other Ambients. This characteristic allows them to describe the processes in their dynamism and change. Ambient - oriented modeling has as its main goal the preliminary development, testing and verification of the main scenarios. This dynamism determines the use of temporal and interval logic, which describes the state of objects dynamically in the process of their change. The simulation of the CCA-modeled scenarios is realized by the ccaPL interpreter, and of the ITL-models by the Tempura interpreter. It is necessary to create a common prototype simulation environment for modeling, in which to conveniently model and visualize the main processes and scenarios.

Conclusion

The first step in developing customer services in CPSS is the virtualization of objects from the physical world in which people de facto live. Representing all participants in these services - people, digital devices, IoT, software components and systems in a unified way is crucial for the development of such systems. Ambient-oriented modeling is a good approach for the realization of these two tasks. In the process of Ambient modeling, objects can be virtualized in their contextual dependency and dynamism. They provide a mechanism for uniform representation of different types of objects - physical and virtual. In essence, Ambients describe the spatial aspects of "things". This article shares our idea of using Ambients in modeling the temporal aspects of "things", using the opportunities provided by Interval and Temporal Logic. The aim of our future research is to develop a prototype of a common modeling environment, which takes into account both the spatial and temporal aspects of the modeled objects, processes, scenarios and plans.

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ABDELKEBIR KHATIBI: WRITING ACROSS LANGUAGES

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Abstract

This paper examines the Moroccan writer Abdelkebir Khatibi's position towards the French language and bilingualism, as manifested in his 1983 work, *Love in Two Languages*.
My analysis will draw in particular on the author's bilingual writing as a post-colonial translation of the double self across languages highlighting themes such as identity, otherness, and bilingualism which make up the very fabric of this allegorical novel. Moreover, it will highlight the means by which Khatibi's puzzling text reflects the Moroccan identity through the affirmation of difference and openness to plurality.

Keywords: Abdelkebir Khatibi, bilingualism, translation, identity, otherness.

GRAM SABHA MOBILIZATION: AN INITIATIVE FOR INCLUSIVE GOVERNANCE BY CIVIL SOCIETY ORGANIZATIONS IN INDIA

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Abstract

The 73rd Constitutional Amendment Act of 1992 is considered as one of the world's largest experiments in deepening democracy through decentralisation and promising inclusive governance at the grassroot level in India. Many countries around the world, including India, have institutionalised local public meetings in jurisdictions such as villages or towns, where citizens gather on a regular basis to deliberate on important public issues, be it construction or repair of local roads, or irrigation canals, or provision of hand pumps, or sanitation facilities. These local meetings in India are called Gram Sabha's. They are organised by every village panchayat multiple time in a year, as mandated by the Panchayati Raj Acts in different states of India. There are about 250,000 village panchayats in India, and hence, several hundreds of thousands of such meetings are conducted every year in the country. At these local meetings, villagers gather to deliberate, debate, and press for provisioning of their preferred public goods. This is the largest exercise in deliberative democracy in the history of human civilisation. The Panchayati Raj Acts specify that public good projects that receive favourable support in the Gram Sabha should be incorporated while preparing the annual budgets of the village panchayats and the budget must be approved by the Gram Sabha before it is sent to the block panchayat for grant request. Hence, the Acts do provide some power to this institution (Gram Sabha) to affect public good provision. Yet there is lack of information whether these deliberations actually result in any change in the provision of local public goods, or they are just "talking shops" for people who enjoy group discussions particularly from upper castes.

This paper attempt to address the importance of Gram Sabha as an important unit of local self-governance and focuses how the mobilization process by civil society organizations, can enhance the participation of the villagers in the meetings of Gram Sabha. Furthermore, this process can also improve the participation of excluded sections of society, resulting in inclusive governance and providing a voice to deprived sections in the formulation of plans and programs according to their needs and concerns.

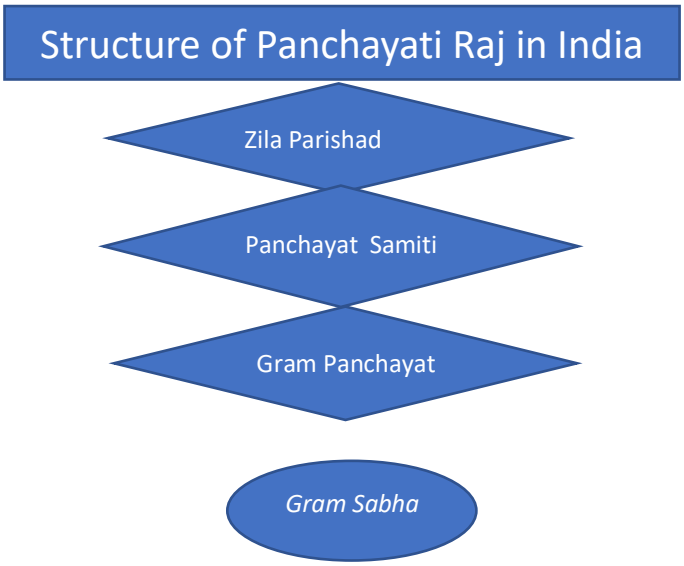
Keywords: Gram Sabha, mobilization, public goods, Panchayati raj, deprived sections, inclusive governance.

Introduction

P**anchayati Raj Institutions (PRI)** as units of local government have been in existence in India for a long time, in one form or another. However, it was only in 1992, on the recommendations

of the **LM Singhvi Committee 1986,** that it was granted constitutional status as the third level of India's federal democracy through the **73rd Amendment Act.** The primary objective of establishing the third tier of the government (PRI) is to increase **democratic participation,** to better **articulate local needs and priorities,** and **to ensure a more efficient use of local resources** along with greater accountability and transparency. The 2.5 lakh Gram Panchayats (GPs) in the country have been entrusted to provide basic services in the villages and plan for local economic development. The *Gram Sabha* was instituted in 1992 as a part of the 73rd amendment to the Indian constitution, which requires that 840 million people living in approximately one million villages in rural India have the opportunity to participate in deliberation about political and economic issues. 'Consensus oriented' and 'participation' are two important pillars of good governance and the institution of *Gram Sabha* in PRI helps in ensuring both these pillars. Further this bottom-up approach is meant to reflect the needs of various stakeholders ensuring participative democracy.

In India ministry of Panchayati Raj commemorates awards to the Panchayats on every 24th of April every year. These awards are given to the best performing Panchayats. In this connection *Nanaji Deshmukh Rashtriya Gaurav Gram Sabha Puraskar* (NDRGGSP) to Gram Panchayats for outstanding performance of *Gram Sabha*.



Research indicates that democratic deliberation is possible if people are informed and mobilized to participate in the governance process particularly at bottom level.

Origins and Development

India's use of deliberative institutions dates back to at least 5BC. These institutions such as *sabhas*, *kathas*, *panchayats*, and *samajs* – allowed both peasants and various intellectual, political, and religious elites an opportunity to engage in public debate and question the state. Indeed, "the term *sabha* (association) itself originally indicated a meeting in which different qualities of people and opinions were tested, rather than the scene of a pronunciamento by caste elders. The modern use of deliberative institutions can be traced back to Henry Maine, who was inspired by British accounts of indigenous systems of autonomous village governments to develop a theory of decentralized government based around villages, rather than a centralized state. Maine's account suggested that laws might be developed from the ground-up in a way that was consistent with traditional customs. In 1882, British Viceroy Lord Ripon took up some of Maine's suggestions, reforming local government to provide "political education" and revive India's indigenous methods of governance. The 1920 Act established democratically elected

village councils, although these institutions varied considerably from province to province. Maine's understanding of Indian village governance also shaped Mohandas Gandhi's thinking.

Gandhi saw self-reliant villages and decentralized power as the ideals to which an independent India should aspire to realize. He suggested that a loose federation of villages – the *panchayat raj* – would produce a system of democracy centred around local participation and cooperation. Ultimately, Gandhi's proposal failed to gain sufficient political support during the Constituent Assembly Debates due to concerns that illiteracy, inequality, and hierarchical social structures in rural India would prevent limit the effectiveness of citizen participation. But village democracy did not entirely disappear from the Indian constitution.

However, Article 40 stated that "the State shall take steps to organize village *panchayats* and endow them with such powers and authority as may be necessary to enable them to function as units of self-government." Article 40 mandates that all Indian villages have an elected village council as the executive body and the *Gram Sabha* as a legislative body. The *Gram Sabha* meets at least twice a year and all citizens with the right to vote are members of the *sabha*. This provision was non-binding, but some state governments did establish formal village democracies. India's largest state, Uttar Pradesh, eventually developed a novel form of deliberative institution – the *gaon sabha* – which was convened twice a year to debate and set priorities for the villages.

What is *Gram Sabha?*

The *Gram Sabha* is the fulcrum of the Panchayati Raj and village development. People use the forum of the *Gram Sabha* to discuss local governance and development, make need- based plans for the village. The Panchayat implements development programs under the overarching mandate, supervision and monitoring of the *Gram Sabha*. All decisions of the Panchayat are taken through the *Gram Sabha* and no decision is official and valid without the consent of the *Gram Sabha*. *The Gram Sabhas* are open meetings, presided by local elected officials. They are always held on holidays, and in public buildings or open spaces. Preparations for the assemblies include publicity, and the distribution of various planning documents. Minutes are kept, and each sub-sector group presents a report of its deliberations and produces a list of "felt needs."

Constitutionality of *Gram Sabha*

- The term *Gram Sabha* is defined in the Constitution of India under Article 243(b). *Gram Sabha* is the Sabha of the electorate. All other institutions of the Panchayati Raj like the Gram Panchayat, Block Panchayat and Zila Parishad are constituted by elected representatives.
- Persons, those who are above 18 years of age, living in the village and whose names are included in the electoral rolls for the Panchayat at the village level are the members of *Gram Sabha.*

Functions of *Gram Sabha*

The Constitution mentions that the *Gram Sabha* exercises such powers and performs such functions at the village level as the Legislature of a State may, by law, provide [Art 243G]. Report of activities undertaken by the Gram Panchayat since the last *Gram Sabha* is presented and the resolutions and suggestions of the last *Gram Sabha* and the action by the Panchayat there on.

- *Gram Sabha* prepare and promotes and assist the Gram panchayats in the implementation of development schemes (drainage and sanitation schemes) of the villages
- Discussions are held about distribution of rations, old age pension, pension for handicapped etc, in Panchayat limits.
- The *Gram Sabha* also discusses problems of enrolment of all children in the schools, their attendance and development of schools in its jurisdiction.
- The *Gram Sabha* also discusses the hospitals and veterinary institutions and their activities. They educate the people about the precautions to be taken to protect the health and hygiene of people and cattle.
- The health officer of the primary health centre of the Panchayat tool will attend the *Gram Sabha* and brief the *Gram Sabha* about the inoculation programmes, children suffering from malnutrition and precautionary steps to be taken against disease like malaria, etc. The *Gram Sabha* discusses the services and facilities to be provided by the health centres.
- The Secretary of the Gram Panchayat will identify the public works to be undertaken under the Panchayat grants and place it before the *Gram Sabha* and get its approval for incorporating it into the plans of the Panchayat.

Role of Civil Society Organizations in mobilising villagers to participate in the meetings of *Gram Sabha*

Civil society organizations across the country who are working on the issues of Panchayati Raj can play an important role of facilitator in the process of mobilising people to participate in the proceedings of *Gram Sabha*. The idea behind this noble cause is to enable and empower the villagers in identifying their local needs and issues which can create conditions for new lines of development.

How CSO can initiate the process of *Gram Sabha* Mobilization

- **Forming a collective**: Within a gram Panchayat or cluster of Gram Panchayat there is a group of people who are very active and voluntarily desire to bring a positive change within their society. A CSO can identify these active citizens and form a collective. They can be
  - Self-help Groups
  - Aganwadi workers
  - Senior citizens
  - Primary school teachers of government institutions
  - Already in existing collectives/mandals/networks/manchs
  - Local officials like the block development officers, secretary to Panchayat
  - Elected representatives: members of legislative Assemblies, legislative councils, Panch and sarpanches.

These citizens are already active and known within their locality, therefore they can act as intermediary link between the local people and the CSO. This collective should be convinced that their formation into one vibrant group can enable the governance process more inclusive, participatory and decentralised.

- **Capacity Building Inputs needed by the collective through CSO**

Civil society who is playing the role of facilitator should orient this group with the following capacity building inputs

- Orientation on the basic concept of Panchayati Raj.
- Importance of the 73rd constitutional Amendment Act of 1993. Its basic features.
- Meaning and importance of *Gram Sabha.*
- Functions, meetings, and importance of participation in *Gram Sabha.*
- Matters and issues which can be addressed and decided *in Gram Sabha.*
- How to organize interface meetings with the government and other officials for the purpose of formal linkages.
- Who are the excluded sections of the society?
- What is inclusive governance stand for?

❖ **How to start *Gram Sabha* mobilization campaign?**

The purpose of this initiative is to ensure frequent and focused conduct of *Gram Sabha* meetings and to encourage the local community especially the marginalized sections of the society like the Dalits, women, handicapped, tribals to participate in the meetings and contribute in the decision-making process of village level plans. The collective which was identified, formed and trained should start campaign at least one month before the date of *Gram Sabha*. They should first find out that exact date, time and venue of the *Gram Sabha*. After this they should first visit that Sarpanch and Panchs (especially women panch) of the gram panchayat in order to explain the purpose of this mobilization process. A meeting should be organised focussing issues pertaining to the importance of the *Gram Sabha* and the mobilization process among the members of the collective, like elected representatives sarpanch and panch, aganwadi workers, ex-servicemen, senior citizens, members of SHGs, youth and others along with the civil society organisation. Once an understanding is built between the collective and the elected representatives the process of mobilisation can be taken forward smoothly with the help these different stakeholders within the area of Gram Panchayat.

❖ **How to include excluded sections in the meetings of *Gram Sabha?***

The marginalised sections feel that in the meeting of *Gram Sabha* their demands, apprehensions and issues will be addressed, but most often it is found that both at the institutional level and individual level their concerns are suppressed. For example, at the institutional level the Sarpanch and the Secretary do not encourage these deprived sections to participate and most of the times, when they come forward with their demands and grievances, they are instructed to keep quiet and sit in one corner. At the individual level especially, women are excluded and threatened not to attend *Gram Sabha*, as according to the opinion of some people, these are the affairs which are to be managed by the male of the society and women have no concern to come and participate. Thus, there is a need to make these institutions more friendly and accessible to the marginalised people, particularly the women, lower castes, handicapped, poor, old aged, and unemployed youth.

Some of the Popular Methods of *Gram Sabha* Mobilization







Wall Writing: Art is an evolutionary act, with its impact on society constantly changing. Being dynamic, there are no rules attached to it. Organisations and community-based collectives can use wall paintings to inform communities about their rights and entitlements. It has been witnessed that pictorial wall paintings have been an integral part of development communications plans. It ensures better reach amongst the community with low literacy levels, builds good recall and provides information to people who do not have access to any other media form. The volunteers of the collective can use the walls of those places where the villagers spent most of their time and visit frequently like panchayat ghar, aganwadi, chaupaal, primary health care center, public ration stores, religious places, government schools etc. They can use the walls of these places to announce the date, venue, day, time and importance of *Gram Sabha*.



Door-to-door: It is a canvassing technique generally used for campaigning, in which the members of the collective walk from the door of one house to the door of another, trying to inform the villagers of the gram panchayat especially the women and other excluded sections about the importance of *Gram Sabha* and how their participation can bring a positive impact in the development of their village and community, and how their issues can be addressed on this platform in the presence of the elected representatives as well as local government officials They are also informed about the venue, date and time when the *Gram Sabha* will be organised.



Distribution of pamphlets and hand bills: Pamphlets and hand bills should be distributed and published in local language as a part of *Gram Sabha* campaign.





Pasting of wall posters: In this Strategy of campaigning, the school children can also participate by drawing wall posters. The wall posters should carry forward the message of the importance of *Gram Sabha*, and participation of all the sections, so as to make the governance process more inclusive.



Orientation Programs: In this method the information related to the functions, powers, responsibilities, decision making, importance of participation of excluded sections is disseminated to the participants. This program can be conducted during half to one daylong workshop. It can be followed up by periodical sensitization. The participants of these programs can be elected representatives of Gram panchayats, SHG women, Youth groups, Panchayat committee members, active citizens of Gram panchayat, ex- army men, Aganwadi workers etc.



Audio/Video Cassettes: Short duration video films providing information can also be a part of campaigning in the villages, which carry the message of participation in *Gram Sabha* and its features. Through public address system, songs can also be played which exclusively covers *Gram Sabha*.



Folk songs: The members of the collective can identify a group of singers and composers, who can compose and sing some folk songs in the local language in which they can convey to the villagers the message of the importance of *Gram Sabha* and how they can make local self-governance institutions work more effectively. These songs can be sung frequently before one week of *Gram Sabha*. The songs should also convey the time, date and venue of the *Gram Sabha*.



Informal Group Meetings: Such meetings can be organized involving all the stakeholders for the success and inclusiveness of *Gram Sabha*.



Nukkad Nataks: It can be an important medium for dissemination of knowledge local people should be involved to play different characters of *Gram Sabha*. The theme of the play should highlight the importance of *Gram Sabha* and the role of each character should emphasize how with their participation as a woman, dalit, handicapped, old age, can make the *Gram Sabha* more inclusive in nature. while organising such type plays it should be kept in mind that the venue and time should be such that most of the people can participate as organisers as well as observers.

Influence, Outcomes, and Effects of *Gram Sabha* Mobilization

- Enhanced quality of deliberations in *Gram Sabha*: Evidence drawn from thousands of households over hundreds of villages in various Indian states finds that the quality of governance improves when *Gram Sabhas* are held as scheduled. For instance, policies that provide access to Below Poverty Line (BPL) cards that provide public benefits are substantially better targeted to citizens in need when *Gram Sabhas* are held at regular intervals.
- Greater participation of excluded sections: Mobilization process witnessed a greater and inclusive participation of all the sections of the society especially women, scheduled castes and scheduled tribes, and other deprived sections.
- Governance where people matter: *Gram Sabha* has witnessed that it is one of the biggest platforms of deliberative democracy, where people deliberate and discuss issues related to their communities. *Gram Sabha* is an epitome of participatory and

direct democracy, it is the only body, which provides valuable inputs to Gram Panchayat to lead local government effectively.

- *Gram Sabhas* serve as valuable examples of "oral democracy," in which the equal right to participate in talk-centric institutions is seen as a way of deepening democracy. This highlights the importance of oral competency, the "capability of speaking in public in civic settings in a manner that is effective in eliciting a response, generating a discussion, and reaching a decision"
- This process of mobilization enables in bringing together as many stakeholders as possible to raise people's awareness of and demand for a particular programme, to assist in the delivery of resources and services, and to strengthen community participation for sustainability and self-reliance.
- This process of engaging communities through mobilization enables locals to identify community priorities, resources, needs and solutions in such a way as to promote representative participation, good governance, accountability and peaceful change.

Best practices related to *Gram Sabha* (Source: National Institute of Rural Development and Panchayati Raj, Rajendranagar, Hyderabad)

Gram Panchayat Pimpri Gawali

Pimpri Gavali is model village in Maharashtra state. This village achieved water security in short span due to effective implementation of the Adarsh Gaon Yojana of the Government of Maharashtra. This village falls in the rain fed area of the Maharashtra. *Gram Sabha* played crucial role for the participatory approach in watershed development activities. Gram Panchayat had taken landmark decision to ban tube wells to avoid the exploitation of the groundwater through *Gram Sabha* resolution entitled 'Groundwater Regulation and Management Resolution. Gram Sabha also passed resolutions to ban liquor, ban for open grazing to protect forest, ban for open defecation etc.

Gariba Gram Panchayat - East Champaran, Bihar

Situated in Kalyanpur block of Patna district, Gariba is a Gram Panchayat motivated to eradicate poverty and improve the standard of living of the villagers. The Panchayat has played a pioneering role in improving the infrastructure of the village while engaging the local folk in these activities and providing them ample of chances to work. The measures announced in the *Gram Sabha* meetings aimed at an all-inclusive and structured growth of Gariba village. It is only natural that the positive outcome of the work done by the Gariba Panchayat attracted more and more people to its *Gram Sabha.*

Major Highlights

- Appreciable attendance of women and other minorities in the Gram Sabha.
- Tree plantation activities were carried out throughout the village.
- Infrastructure of the village improved immensely.
- Ward Sabha and Mahila Sabha meetings were actively organized.

Challenges Ahead

In actual practice as an important unit of local self-governance, *Gram Sabha* has not risen to the expectations of the lawmakers and spirit of the constitution of India. The socio-economic and political realities of Indian villages are not so conducive that just passing of legislation will bring desired changes. Even today almost two third of villagers are functionally illiterate. Their illiteracy is crippled with prevailing caste and gender biases. The rigid caste hierarchy has traditionally excluded dalits and other backward castes from the realm of political decision-makings. The powerful patriarchal norms still restrict women to participate in public arena. That is, on average, almost three quarter of population in every village had been traditionally excluded from socio-political decision-makings at local levels and to take part in community resource management, or run for local office. Reservations of seats for women do not appear to increase the number of female citizens who attend or speak at these meetings. Hence there is a dire need to make this unit of local governance effective both at individual and institutional level.

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THE EFFECT OF BIOLOGICAL FACTORS AND CHEMICALS ON THE HUMAN BODY

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Abstract
Man is part of the biosphere, the product of his evolution, so his health and ability to work depend more on his interaction with the environment. Human beings, like other living organisms, are involved in metabolism and energy flow to the environment. They are also affected by environmental and biological factors. However, to some extent, man has learned to protect himself from adverse environmental factors.At the same time, man has a great influence on the environment around him.

Keywords: Biological factor, Environmental factor, Chemicals

BIYOLOJIK FAKTÖRLERIN VE KIMYASALLARIN INSAN VÜCUDU ÜZERINDEKI ETKISI

Özet
İnsan, evriminin ürünü olan biyosferin bir parçasıdır, bu nedenle sağlığı ve çalışma yeteneği daha çok çevre ile etkileşimine bağlıdır. İnsan da diğer canlılar gibi çevre ile metabolizma ve enerji akışı içinde yer alır.Çevresel ve biyolojik faktörlerden de etkilenirler.Ancak insan olumsuz çevresel faktörlerin etkilerinden bir dereceye kadar kendini korumayı öğrenmiştir.Aynı zamanda insan, çevresindeki çevre üzerinde büyük bir etkiye sahiptir.

Anahtar Kelimeler: Biyolojik faktör, Ekolojik faktör, Kimyasallar

İnsan doğanın bir parçasıdır ve onunla yakından bağlantılıdır. Doğanın insan yaşamındaki ve faaliyetindeki rolünü değerlendirmek çok zordur. 20. yüzyılın başlarında, dünya nüfusu temiz hava ve temiz su aldı. Ancak on yıllar sonra insanlar son derece tehlikeli biyolojik ve çevresel faktörlerle uğraşmak zorunda kaldılar. Yirminci yüzyılın ikinci yarısından itibaren hızlı nüfus artışı ve bilimsel ve teknolojik devrim, biyosferde bozulma belirtileri yarattı. Milyonlarca yıl içinde oluşan doğal ekosistemler önemli değişimler geçirmiş ve dış etkilere karşı savunmasız hale gelmiştir (Shanti Gunawardena, Mark E Dunlap.,2012).

Doğal ekosistemlerin alanı, ormanların alanı da dahil olmak üzere her yıl% 1 azalmakta ve çöllerin alanı genişlemektedir. Şu anda, bozulmamış ekosistemlerin sadece yaklaşık %40'ı kalmıştır.Temel sınırlayıcı faktörler hipodinamik ve yarım küredir. İlk etapta ölüm nedenleri arasında doğal patojenler vardı. Bunlar arasında, kural olarak, doğal kaynaklı bulaşıcı hastalıkların özel bir yeri vardı. Birçok bulaşıcı hastalığın özü, insan ve evcil hayvanlarla temas etmeden doğada belirli odaklarda yayılmalarıdır. Araştırmalar, kalpte çeşitli hastalıkların olabileceğini gösteriyor (Kərimova R. C.,Eyvazov T. Ə.,Həsənova X.Ə.,2020). Bu hastalıkların en korkunç olanı vebadır. Hastalık, Orta Çağ'da ve takip eden savaşlarda birçok insanı öldürdü.Veba, insanlarda ve hayvanlarda oldukça bulaşıcı bir hastalıktır ve karantina olarak kabul edilir. Bu hastalığın etken maddeleri veba patojenleridir. Bulaşıcı olmayan endemik hastalıklar da vardır.Bu tür hastalıklar bölgedeki toprak, su ve havanın spesifik bileşimi ile ilgilidir. Biyokimyasal durumlarla ilişkili en yaygın hastalıklar iyot eksikliğine bağlı endemik guatr, flor fazlalığına bağlı florozis, flor eksikliğine bağlı çürük ve demir eksikliğine bağlı anemidir. halka kırılmasıdır.

Vücudun normal işleyişi, iç ortamın bileşimini nispeten sabit tutmakla mümkündür. Talep bir faaliyet kaynağıdır, kişinin yaşam koşullarına bağımlılığını yansıtan bir durumdur.İki talep düzeyi vardır (Дерхо М. А., Балабаев Б. К.,2020). Birinci düzey yaşamsal, sosyal ve ideal ihtiyaçları içerir.Yaşamsal ihtiyaçlar biyolojik bir varlık olarak insan yaşamının sağlanması ile ilgilidir. Sosyal ihtiyaç, bir kişinin toplumdaki yaşamı ile ilgilidir. İdeal ihtiyaç, bir insanda bilinç, düşünme, bilişin varlığı ile ilgilidir.İkinci ihtiyaç - bağımsız olma ihtiyacı - olmadan ilk ihtiyaçları karşılamanın zor veya imkansız olduğu ikincil bir ek ihtiyaçtır.

İnsan, evriminin ürünü olan biyosferin bir parçasıdır, bu nedenle sağlığı ve çalışma yeteneği daha çok çevre ile etkileşimine bağlıdır. İnsan da diğer canlılar gibi çevre ile metabolizma ve enerji akışı içinde yer alır.Çevresel ve biyolojik faktörlerden de etkilenirler.Ancak insan olumsuz çevresel faktörlerin etkilerinden bir dereceye kadar kendini korumayı öğrenmiştir.Aynı zamanda insan, çevresindeki çevre üzerinde büyük bir etkiye sahiptir (Shanti Gunawardena, Mark E Dunlap.,2012).Dünya Sağlık Örgütü'nün tüzüğü, sağlığın en temel insan haklarından biri olduğunu belirtir (Дерхо М. А., Балабаев Б. К.,2020). Etkileri hastalığa yol açabileceğinden, kişinin en önemli hakkı, sağlığını belirleyen faktörler veya risk faktörleri hakkında bilgi almaktır.Vücut romatizmasında kronik enfeksiyon kaynağı bulunmasıÇevresel risk faktörleri, bronkopulmoner hastalık gelişimi gibi atmosferin fiziksel ve kimyasal özelliklerindeki değişiklikleri içerir. Sıcaklık, atmosferik basınç ve manyetik alan gücündeki günlük keskin değişiklikler kardiyovasküler hastalığı şiddetlendirir.

Aşırı hava olayları, yüksek düzeyde radyasyon, manyetik ve diğer radyasyon, yaşam koşulları ve yaşam tarzı, sigara, alkol ve uyuşturucu kullanımı, yetersiz beslenme, uykusuzluk, stres, hipo ve hiperdinamik, zararlı çalışma koşulları, kötü yaşam koşulları, aile istikrarsızlığı, tıbbi bakım, önleyici tedbirlerin etkisizliği, düşük kaliteli tıbbi bakım ve zamansız teslimat, tümü düşük biyolojik ve çevresel risk faktörleri ile ilgilidir (.Hmwe Kyu, Katholiki Georgiades, Michael H. Boyle.,2010).Modern toplumda aşağıdaki risk faktörleri hakimdir. Hipodinamik, aşırı yeme, kötü alışkanlıklar, stres, çevre kirliliği vb. Günümüzde insan çevresinin olumsuz etkileri şu süreçlerle kendini göstermektedir: doğan çocuk sayısında artış, hızlanma, yaşamın organizasyonunda sigara içme, uyuşturucu bağımlılığı, alkolizm, miyopluk, kronik hastalıkların varlığı, kilo alımı, meslek hastalıklarında artış vb.

Uykusuzluk en sık görülen uyku bozukluğu türüdür. Böyle bir bozukluğun uykuya dalmak, sık uyanmak veya kısa uykuya dalmak zordur. Buna karşılık narkolepsi başka rahatsızlıkları olan hastalarda görülür.Diğer uyku bozuklukları gece apnesini içerir. Bu, dil kökünün ve

boğaz kaslarının zayıflamasının bir sonucu olarak uyanıklık ve karakteristik horlamanın eşlik ettiği geçici bir solunum durmasıdır. Bu hastalığın nedenlerinden biri genellikle obezite olarak kabul edilir.

Yüksek ve düşük güneş radyasyonu seviyeleri sağlık üzerinde olumsuz bir etkiye sahiptir. Uzun süreli ışık eksikliği, tüberküloz ve kardiyovasküler hastalıkların tedavisini zorlaştıran bir dizi hastalığa yol açar (Hmwe Kyu, Katholiki Georgiades, Michael H. Boyle.,2010). Güneş ışınlarına aşırı maruz kalmak bağışıklık sistemini zayıflatır ve kötü huylu tümör riskini artırır. Sonuç olarak, bir kişi bronşiyal astım, ilaç alerjileri, kolera, romatizma vb. geliştirir.Alerji - vücudun alerjen adı verilen herhangi bir maddeye karşı aşırı duyarlılığı veya tepkisi ile belirlenir.Organizmanın türüne bağlı olarak, alerjenler harici ve dahilidir. Dış alerjenler bulaşıcıdır ve bulaşıcı değildir.Yanıklar sırasında radyasyona maruz kalma, baş dönmesi ve diğer etkiler otallerjenik olabilir. Son zamanlarda çevre kirliliği nedeniyle alerjiler arttı.
Onkolojik hastalıklarda artış var. Onkolojik hastalıklar, tümör oluşumu ile ortaya çıkar. Tümörler, fazla dokunun patolojik büyümesi olan neoplazmalardır. İyi huyludurlar ve çevre dokularda kalınlaştırıcı etkiye sahiptirler ve kötü huyludurlar ve çimlenip çevre dokulara yayılarak onları yok ederler (Luciana Rosa Feksa, Evandro Oliveira, Thereza Trombini, Mateus Luchese et al.,2012). Kan damarlarını tahrip ederek kan dolaşımına girerler ve tüm vücuda yayılırlar buna metastaz denir.Onkolojik hastalıklar kanserojenlere, tümöre neden olan virüslere veya güçlü radyasyona (ultraviyole, X-ışını, gama radyasyonu) maruz kalma sonucu oluşur.Kanserojenler, vücutta maruz kaldıklarında iyi huylu ve kötü huylu neoplazmalar oluşturma yeteneğine sahip kimyasal bileşiklerdir. Etkinin niteliğine göre üç gruba ayrılırlar:
1) yerel olarak etkilenen;
2) organotropik, yani ayrı bir organa zarar vermek;
3) Çoklu etkiler, çeşitli organlarda tümörler oluşur.
Karsinojenler, bir dizi siklik hidrokarbonları, azotlu boyaları vb. içerir. yardımdır.Fazla kilolu (obez) kişilerin sayısındaki artış, aşırı yeme, diyet ve yemek ritmi ve düşük fiziksel aktiviteden kaynaklanmaktadır. Aynı zamanda, popülasyonda astenik türler büyüyor ve bu eğilim nadirdir. Her iki durum da bir takım patojenik sonuçlara yol açar.

Sıtma, hepatit, BCH ve bir dizi başka hastalık gibi bulaşıcı hastalıklarla enfekte olan insan sayısı çok sayıda hesaplanır. Bu nedenle enfeksiyon nedeninin tekrarlaması virüsler arasında kaydedilir. Birçok virüs doğal temellerinden kopar ve yeni bir aşamaya girer ve insan ortamında hayatta kalabilir - grip, viral kanser türleri ve diğer hastalıkların nedeni haline gelirler.Çevrenin rolü ne kadar önemli olursa olsun, kalıtımın insan sağlığındaki önemi insan sağlığı için belirleyicidir (Казякова У.В., Уулупова Е.В., Алиева А.М. и др.,2012). İnsan kalıtımı, bireylerin üreme ve uzun bir yaşam sürme yeteneğini yansıtan canlılığı da içerir. Ebeveynden çocuğa aktarılan genotip, yaşam boyunca birçok nesli oluşturur ve fiziksel, kimyasal, biyolojik, sosyal vb. bir dizi çevresel faktörden etkilenirler. etkiler.

Etki nesnesine göre üç gruba ayrılabilirler:
1. Sonraki nesiller üzerindeki etki. Bu durumda çevrenin durumu, coğrafi faktörler, ulusal, dini, etnik ve aile gelenekleri, gelenekleri vb. Çok önemlidir.
2. Gelecek nesillerin kromozomları üzerindeki etkisi. Cinsiyet dokularının kromozomları ve embriyoları üzerinde hem olumlu hem de olumsuz etkileri olan yaşam tarzı olduğu için gelecek nesillerin yaşam tarzı büyük önem taşımaktadır.
3.Gelişim sırasında embriyonun kromozomları üzerindeki etkisi. Genetik makine, özellikle embriyonik gelişimin erken aşamalarında, genetik programın vücudun ana eylem sisteminin temelini atma şeklinde uygulandığında hızla etkilenir. Kalıtsal bozukluklar genellikle gelecekteki ebeveynlerin, hamile kadınların yaşam tarzına bağlıdır.

Dünya Sağlık Örgütü'ne göre, insan sağlığı sadece hastalık ve fiziksel engelliliğin varlığı ile değil, aynı zamanda kişinin tam fiziksel, zihinsel ve sosyal refahı ile belirlenir.Doğal faktörler, iklimsel, jeolojik ve biyolojik faktörlerin etkisini karakterize eder. Bölgenin insanlar üzerindeki özellikleri (Nabil M Ibrahim, Esam A Eweis , Hossam Saad El-Betagi.,2011).Sosyo-ekonomik sistem, bir kişiyi sosyo-yasal statü, maddi güvenlik, kültür ve eğitim düzeyi ile etkiler.Antropojenik faktörler ve insan ekonomik faaliyeti genellikle bir kişi, yaşam koşulları ve sağlığı üzerinde olumsuz bir etkiye sahiptir ,çevre nispeten muhafazakardır. biyolojik türlerin fiziksel, kimyasal, iklimsel, biyolojik ve diğer parametrelerle evrimi açısından. Değişim hızı, canlı organizmaların insan yaratılmadan önce yeni çevreye uyum sağlamasına izin verdi (Eva C. Guinan.,2009)..

Sonuç olarak insanın etrafındaki doğal ve yapay çevre o kadar hızlı değişmeye başladı ki insan vücudu bu değişikliklerin çoğuna bile uyum sağlayamadı.Bu durumun üstesinden gelebilmek için insan ve doğa arasında ortak bir evrim yaratmak gerekiyor, yani, insan faaliyetinin hızını ve ölçeğini, insan habitatındaki değişikliklere uyum sağlamak mümkün olacak şekilde düzenlemek (Yarlini Balarajan, Usha Ramakrishan et al.,2012).

Hepimiz sesin kardiyovasküler sistemi nasıl etkilediğini biliyoruz. Gürültü, kardiyovasküler stres için potansiyel bir faktördür. Havacılığın ve ulaşımın gürültüsü, tüm dünyada olduğu gibi hem gündüz hem de gece tansiyonu etkiler. Yüksek trafik gürültüsünün bir sonucu olarak çocuklarda artan sistolik ve disostolojik kan basıncı tespit edilmiştir.Bir dizi kaynaktan gelen gürültünün günlük etkileri, fizyolojik sistemlerin restore edildiği dinlenme dönemlerinde nüfusun sağlığını olumsuz yönde etkileyebilir.
Sürekli yüksek ses kan basıncını yükseltir, kalp atışını kısaltır, kan damarlarını daraltır ve kaslara, beyne ve diğer organlara giden kan akışını artırır. Sesin etkisi sonucunda beyinde adrenalin ve noradrenalin salınımı artabilir. Adrenalinin kalbin aktivitesini etkilediği, serbest asit ve kan salınımını desteklediği bilinmektedir.

Sesin sinir sistemi üzerindeki etkileri üzerine yapılan araştırmalar, olumsuz akustik koşullarda yaşayan insanların, merkezi sinir sisteminin işlevsel durumundaki değişikliklerin ilk belirtilerini gösterdiğini göstermiştir (.Дерхо М. А., Трофимова Р. Г., Дерхо А. О.,2020) Serebral kortekse giren ses sırasındaki tahriş, orada meydana gelen sinirsel süreçleri değiştirir (Balducci L.,2010).. Ses çok yüksekse veya uzun süreli bir etkiye sahipse, serebral korteksteki hücreler aşırı ajite olur. Bu durumda, sinir hücrelerinin aktivitesinin sınırları ihlal edilir ve bu hücrelerin tahriş edic maddelere tepkisinin doğası değişir.Zihinsel işle uğraşan kişilerde ev gürültüsünden dolayı tansiyon yükselir, anne karnındaki bebek bile gürültünün zararlı etkilerinden korunamaz, dikkat azalır.

Uyku sürecinde, insan vücudunun tüm sistemi restore edilir. Sesin sürekli etkisi altında uyku sırasında beyin aktivitesi ve kardiyovasküler sistem gibi fonksiyonlar bozulur.Düşük uyku kalitesi gündüz aktivitelerini olumsuz etkileyebilir.Ses uyku süresini ve derinliğini azaltır. Sesin kronolojik konfigürasyonunun, farklı yoğunluktaki seslerin yer değiştirmesinde önemli bir rol oynadığı bulunmuştur. Farklı insanlar uyku sırasında sese aynı şekilde tepki göstermezler (Balducci L.,2010).

Sese tepki kişinin yaşına, cinsiyetine ve sağlığına bağlıdır. Ses uykunun farklı aşamalarını etkiler. Bu nedenle, rüya görmenin eşlik ettiği uykunun paradoksal aşaması, toplam uyku döngüsünün %20'sinden az değildir; Uykunun bu evresinin kısalması sinir sistemi ve zihinsel aktivitede ciddi bozukluklara, derin uyku evresinin kısalması ise hormonal bozukluklara, depresyona ve diğer ruhsal bozukluklara yol açar.Bir günlük çalışmadan sonra normal bir

dinlenme olmadığında, iş sonrası yorgunluk ortadan kalkmaz, yavaş yavaş kronikleşir ve bir dizi hastalığın gelişmesine yol açar - sinir sistemi bozuklukları, hipertansiyon. Ses kaynağı radyasyonunun yönünü değiştirmek, kaynaktan koruma yerine giderken ses yoğunluğunu azaltmak vb.

Titreşimin sağlık üzerindeki etkilerini hepimiz biliyoruz. Titreşim, farklı şekillerdeki elastik cisimlerin mekanik salınımıdır.Titreşimin vücut üzerindeki etkisi farklıdır, tüm organizmayı etkiliyorsa genel titreşim, vücudun bir bölümünü etkiliyorsa lokal veya lokal olarak adlandırılır. titreşim. Titreşimin biyolojik etkisi frekansına bağlıdır; 15 Hz'ye kadar frekansa sahip salınımlar vestibüler aparatı etkiler. 25 Hz'e kadar frekansa sahip danslar, kemiklerde ve eklemlerde değişikliklere neden olan ayrı darbeler şeklindedir; 50 Hs'den 250 Hs'ye kadar olan danslar sinir sistemini etkiler, damar spazmlarına, kalp fonksiyonlarında değişikliklere, yorgunluğa, çeşitli organlarda ağrılara, titreşim hastalığına neden olur.

Çevrenin elektromanyetik kirliliği ve insan sağlığına etkisi biyolojik nesnelerin oluşturduğu elektrik alanlarını içerir.Elektromanyetik kirlilik dünyada önemli bir konu olduğundan, DSÖ bu sorunu insanlık için en acil sorunlar listesine dahil etmiştir. Elektromanyetik kirliliğin insanlar üzerindeki etkisinin sonuçları, kardiyovasküler ve sindirim sistemleri dahil olmak üzere vücudun temel işlevlerine verilen zararı, zihinsel bozuklukların gelişimini vb. gösterilebilir.EMS'nin nispeten hafif etkileri bile kanser, davranış değişiklikleri, bayılma, bronşiyal, astım, aritmiler, migren, kronik yorgunluk ve daha birçok olumsuz duruma neden olabilir.Bazı raporlara göre, büyük şehirlerdeki çoğu miyokard enfarktüsü vakası, atlamalı güçlü düşük frekanslı insan yapımı EMS ile ilişkilidir.Yoğunluk, şehir dışındaki seviyeyi 1000 kat aşıyor.

Gerçekler, büyük bir sanayi şehrinin düşük frekanslı elektromanyetik alanının normal seviyesinin doğal bir manyetik fırtınaya karşılık geldiğini doğrulamaktadır.Dairelerdeki tehlikeli manyetik alanlar, aşağıdaki yüksek akımlı cihazlardır -ızgaralar, ütüler, buzdolapları, televizyonlar, bilgisayarlar, araba yolunda veya asansörde yaygın yüksek enerjili kablolar Bu tür EMS'nin etkisi, kardiyovasküler hastalıktan muzdarip kişilerde patolojik süreçlere neden olur ve kalp krizine yol açar.

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DETERMINING EFFECTIVE METHODS OF ERADICATION OF *BLACK MULBERRY IDAEOVIRUS* (BMIV) AND *MULBERRY BADNAVIRUS 1* (MBV-1) FROM INFECTED BLACK MULBERRY (*MORUS NIGRA L.)*

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Abstract

The black mulberry tree *(Morus nigra L.)* is an important tree with numerous benefits in pharmaceutical, nutritional, and economic fields. Plant viruses are one of the most serious threats to the black mulberry, as well as all plants worldwide. In 2011, mulberry badnavirus 1 (MBV-1) was discovered in Lebanon in *M. alba* causing mottling and vein yellowing symptoms in the leaves. In Turkey, MBV-1 and another new idaeovirus species called black mulberry idaeovirus (BMI) were discovered in the black mulberry. The economic loss caused by the two viruses still has not been assessed, but the economic loss caused by the badnavirus genus can reach 80–90% in some plants. In this study, we tried to eradicate the two viruses, applying chemotherapy with three different ribavirin concentrations (10, 20, and 30 mg/L) added to the tissue culture media. Furthermore, we applied thermotherapy with a gradual increase in the temperature by 1°C every two days until it reached 33 ± 2 in the photoperiod (16 h light). Additionally, we combined thermotherapy with chemotherapy for better eradication. After 2-3 months of explant cultivation, virus testing was performed (RT-PCR) using MBV-1 and BMI specific primers on plantlets in tissue culture. According to the results, 30mg/L ribavirin has a virus eradication efficiency of 26.3%, while 20mg/L ribavirin has a virus eradication efficiency of 21.9%. Thermotherapy improved the regeneration ratio, so the best efficiency was found when thermotherapy combined with 30 mg/L ribavirin (44%), while the efficiency when thermotherapy combined with 20 mg/L ribavirin was 29.2%. The results indicated the effectiveness of the two viruses' eradication, while all the tested plants after thermotherapy combined with 10, 20, and 30 mg of ribavirin were MBV-1-free.

Keywords: Chemotherapy, Thermotherapy, tissue culture

This study was an M.S. research entitled “Determining effective methods of eradication of Black mulberry idaeovirus (BMIV) from infected black mulberry (*Morus nigra L.)*” of Doaa Elansary.

ETIOLOGICAL FEATURES OF HEPATIC ISCHEMIA, ISCHEMIC NECROSIS AND FATTY DYSTROPHY

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Abstract

Liver pathology ranks first among diseases of the digestive system. According to the WHO, there are more than 2 billion people in the world with liver disease, which is 100 times more than the spread of HIV. The prevalence of liver disease is directly related to the characteristics of modern life. applies to many foods and so on. Changes in the environment and the quality of food affect all organs, especially the liver. In this regard, liver disease is one of the most pressing problems of modern health care organizations around the world.

Keywords: Ischemia, Ischemic necrosis, Fat dystrophy

HEPATIK ISKEMI, ISKEMIK NEKROZ VE YAĞLI DISTROFININ ETIYOLOJIK ÖZELLIKLERI

Özet

Karaciğer patolojisi, sindirim sistemi hastalıkları arasında ilk sırada yer almaktadır. Dünya Sağlık Örgütü'ne göre dünyada HIV'in yayılmasından 100 kat daha fazla karaciğer hastalığına sahip 2 milyardan fazla insan var.Karaciğer hastalığının yaygınlığı modern yaşamın özellikleri ile doğrudan ilişkilidir.Birçok gıda ve yakın zamanda. Çevredeki değişiklikler ve gıdaların kalitesi başta karaciğer olmak üzere tüm organları etkiler.Bu bağlamda karaciğer hastalığı dünyadaki modern sağlık kuruluşlarının en acil sorunlarından biridir.

Anahtar Kelimeler: İskemi, İskemik nekroz, Yağ distrofisi

Karaciğer vücuttaki en büyük bez ve eşlenmemiş en büyük organdır. Karaciğerin vücutta 500'den fazla farklı işlevi gerçekleştirdiği tahmin edilmektedir Karaciğerin işlevi çok farklıdır. Karaciğerin koruyucu bir işlevi vardır - Kupfer hücreleri retiküloendotelyal sisteme aittir ve fagositoz işlevini yerine getirir Karaciğer vücudun biyokimyasal bir laboratuvarıdır. Bu, karaciğerin en önemli işlevlerinden biridir. İşte vücudun hayatta kalması için önemli olan proteinler, yağlar, lenf vb. maddeler sentezlenir (Smirnov AV, Dobronravov VA, Rumyantsev AS ve diğerleri, 2016). Karaciğer, yağların sindirimi için önemli olan safrayı üretir ve vücut için gerekli olan maddeler karaciğerde birikir ve ihtiyaç duyulduğunda vücut tarafından kullanılır.

Karaciğer vücuttaki atıkların yeniden sentezlenmesinde rol oynar. Bu nedenle karaciğerde meydana gelen patolojiler tüm organizmada kendini gösterir (Motov S, Yasavolian M, Likourezos A ve ark., 2016).Karaciğer patolojisi, sindirim sistemi hastalıkları arasında ilk sırada yer almaktadır. Dünya Sağlık Örgütü'ne göre, dünyada HIV'in yayılmasından 100 kat daha fazla olan karaciğer hastalığına sahip 2 milyardan fazla insan var (Smirnov AV, Dobronravov VA, Rumyantsev AS, vb., 2016).Karaciğer hastalığı prevalansı modern yaşamın özellikleri ile doğrudan ilgilidir.Özellikler ekolojiyi, havada ve suda toksik maddelerin varlığını, modern tarımın özelliklerini - birçok gıdayı vb. Çevredeki değişiklikler ve gıdaların kalitesi başta karaciğer olmak üzere tüm organları etkiler.Bu bağlamda karaciğer hastalığı dünyadaki modern sağlık kuruluşlarının en acil sorunlarından biridir.

Karaciğer patolojisinde çeşitli etiyolojilerin hepatiti ve karaciğerin alkolik hastalıkları daha yaygındır. Bu hastalıkların en yaygın nedenlerinden biri karaciğerin hepatotoksik maddelere maruz kalmasıdır. Bunlara birçok uyuşturucu, alkol, çevre kirliliği ve daha fazlası dahildir. Karaciğerin ana işlevleri - detoksifikasyon, safra oluşumu, karbonhidrat, lipid ve protein metabolizmasına katılım, protrombin üretimi, kan pıhtılaşmasına katılım, hormonların, enzimlerin, vitaminlerin birikmesi vb. (Motov S, Yasavolian M, Likourezos A ve ark., 2016) En sık görülen karaciğer hastalıkları siroz, nekroz ve karaciğerin yağlı distrofisine neden olur.Toksik karaciğer hasarı klinik ve morfolojik olarak çok farklıdır. Toksik lezyonlar 3 gruba ayrılabilir - hepatosellüler, kolestatik ve karışık. Hepatositler (nekroz), safra kanalları (kolestaz) veya sinüzoidal hücreler (endotel, yağ içeren) toksik kimyasalların, çeşitli ekzojen zehirlenmelerin doğrudan hedefi olabilir. Toksik karaciğer hasarı, nekroz veya apoptoz ile sonuçlanabilen fonksiyonel bozukluklar (mikrozomal enzimlerin indüksiyonu, hiperbilirubinemi) şeklinde karaciğer parankimine zarar verebilecek hastalıkları içerebilir (Motov S, Yasavolian M, Likourezos A ve diğerleri, 2016). Patolojik nedenler ve yüksek mortalite, tedavi ve hastanın rehabilitasyonu ile ilişkili finansal maliyetler büyük klinik ve sosyal öneme sahiptir.

Çeşitli patojenik faktörler, özellikle hepatotoksik karbon tetraklorür, plazma ve mitokondriyal zarlara zarar verir, bu da doğal olarak hücre içi metabolizmanın bozulmasına ve hücre ölümüne yol açar.Hücre yıkımından serbest radikallerle savaşır, hücre zarını eski haline getirir, mitokondriyal ve mikrozomal enzimleri hasardan korur. yanı sıra kolajen sentezini zayıflatır ve kolajenozu artırır.Karaciğer patolojisinin karmaşık tedavisi için modern program iki ana alanı kapsar: etiyotropik ve patojenetik. Etiyotropik tedavi esas olarak intrahepatik tedavi olarak amaçlanır, karaciğer hasarını önlemek için kullanılır, patojeni arttırmayı ve ortadan kaldırmayı amaçlar.

Karaciğere verilen ekzojen toksik hasar, çeşitli kimyasalların ve dışarıdan vücuda giren fiziksel faktörlerin hepatotoksik etkileri sonucu gelişen geniş bir hastalık grubunu birleştirir. Genellikle bu ajanlar alkol ve vekilleri, ilaçlar, ev kimyasalları, mantar toksinleri, mesleki tehlikeler, radyasyondur (Tapper EB, Sengupta N, Bonder A., 2015). Toksik hepatit, yüksek

görülme oranı ve teşhis arama ve tedavi süreci için önemli ekonomik maliyetleri nedeniyle şu anda dünyadaki en ciddi tıbbi ve sosyal sorunlardan biridir.N, Bonder A., 2015).Eksojen toksinlerin karaciğer hücrelerine girişi üç şekilde gerçekleşir: doğrudan, bağışıklık ve kolestatik. Lezyonun ani formu, mitokondrinin akut tahribatının yanı sıra, kural olarak, hepatositlerin yağ infiltrasyonunun histolojik belirtileri ile karakterizedir. Bu doğrudan karaciğer hasarı formu, kronik alkolizm, ilaç hasarı olan hastalarda ve ayrıca hamile kadınlarda yağlı karaciğer infiltrasyonu olan hastalarda görülebilir.

Doğrudan bir karaciğer hücresi hasarı formu, ilaç metabolit etkileri, metal bileşik zehirlenmesi ve hipoksi ile de ilişkilendirilebilir. Karaciğer hasarının immün formu, karaciğer lobunun periportal bölgesinin nekrozu ile 21 hücre zarına verilen hasar ile histolojik olarak karakterize edilir. Karaciğer hasarının kolestatik formunda, hepatositlerden safra akışı bozulur.Toplumda toksik karaciğer hasarının ve buna bağlı ölümlerin ana nedenlerinden biri aşırı alkol tüketimidir. Dünya Sağlık Örgütü'ne göre Avrupa ülkelerindeki tüm ölümlerin %6,5'i ve DALY'lerin (engelliliğe uyarlanmış yaşam yılları) %11,6'sı alkolle ilgilidir. Avrupa ayrıca, alkole bağlı ölümlerin erkekler için %11.0 ve kadınlar için %1.8 olduğu cinsiyet farklılıkları göstermektedir.

İskemi süreci, toksik hepatitin ana komplikasyonlarından biri olarak kabul edilir.Yağlı distrofi ve karaciğer hücrelerinin nekrozu gelişir. Sonuç olarak, intrahepatik hemodinamik bozulur ve ileri ödem, karaciğer hücrelerinin interstisyel alanlarında metabolitlerin birikmesiyle sona erer.Akut iskemi, başta en aktif olarak kan sağlananlar olmak üzere çeşitli organlara zarar verebilir. Kural olarak, bu tür klinik vakaların tanımında ana odak, yalnızca bir organ veya sisteme verilen hasardır. Bununla birlikte, gerçek klinik uygulamada, genellikle ilk bakışta doğrudan ilişkili olmayan organ ve sistemlerin aynı anda etkilenmesi söz konusudur. Örnekler karaciğer ve böbreklerdir. Bu organlar homeostazın sağlanması açısından en önemli organlardır. Bu bağlamda, genel olarak, kalp debisinin hacminin neredeyse yarısı elde edilir. Bu nedenle, akut iskemi atağı böbrek ve karaciğer fonksiyon bozukluğu için bir risk faktörü olarak kabul edilebilir (Tsyrkunov VM, Prokopchik NI, Andreev VP, 2017).

Vücuda giren zararlı faktörlerin neden olduğu hepatit genellikle karaciğerde iskemiye neden olur. İskeminin meydana geldiği bölgeye kan sağlayan arterlerde direncin önemli ölçüde arttığı ve kollateral kan akışının ciddi şekilde bozulduğu bulunmuştur.Arteriyel foramenlerin daralması, sinir hareketinin neden olduğu fonksiyonel vazokonstriksiyon veya kanda veya damar duvarları içinde dolaşan humoral faktörler, uzun süreli daralmaya yol açan arterlerin düz kaslarının gevşeme sürecinin bozulmasından kaynaklanabilir (Pessayre D., Mansouri A., 2000).

Kan sağlayan arterlerdeki direnç arttıkça intravasküler basınç düşer ve iskemik bölgedeki arterlerin daralmasına neden olur.Bu da iskemi bölgesinde vasküler sistemdeki eritrositlerin yeniden dağılımına yol açar. Fonksiyonel kılcal damarlar plazma haline gelir ve intravasküler basınçtaki azalma, daha sonra kapanmalarına yol açar. Kılcal damarların içindeki basınç azaldıkça, sıvının damarlardan dokulara süzülmesi ve sıvının dokulardan damarlara emilmesi azalır, böylece iskemik bölgeden lenf akışı tamamen durana kadar zayıflar.

İskemi sırasında amino asitlerin hızlı parçalanması, organların normal işleyişinde önemli rol oynayan biyojenik amino ürünlerini değiştirerek biyokimyasal süreçleri olumsuz etkileyen hücrede amonyak birikmesine neden olur. Amonyak birikmesi nedeniyle bölgede staz gelişimi için koşullar yaratır. Sürecin derinleşmesi nedeniyle karaciğerde

ödem gelişir. Patolojik süreç derinleştikçe, gelişen ödem arka planına karşı daha ciddi yapısal değişiklikler kaydedilir. Sinüzoid etrafındaki boşluk artar, hepatositlerin yağ ve protein distrofisi, interlobüler septal diskompleks görülür. Tüm bunların arka planına karşı fokal nekroz gelişir.

Karaciğerde fokal nekrozun çevresindeki hepatositlerdeki glikojen depolarının azaldığı bulunmuştur. Azalan glikojen depoları, vakuollerde asit fosfataz birikimine katkıda bulunur. İskemi nedeniyle karaciğer dokusunda meydana gelen değişikliklerden biri, yıldız şeklindeki retikloendotelyal hücrelerin (Kupfer hücreleri) boyutlarının artması ve bunların kılcal duvarlardan salınmasıdır.İskemi semptomları esas olarak lokal kan dolaşımının zayıflaması ve bunun sonucunda ortaya çıkan metabolik bozukluklarla ilişkilidir.İşlev bozukluğunun doğası, iskeminin gelişme yeri ve zamanına bağlıdır. Farklı dokular kanlanma eksikliğine ve hipoksiye farklı şekilde duyarlıdır (Kerimova RJ, Guliyeva SV, Khalilov VG, 2014).

Karaciğerde karaciğer nakli veya işlevsiz bir parçanın rezeksiyonu, nekrotik parçanın radikal tedavisi için daha uygun bir tedavi olarak yaygın olarak kullanılmaktadır.Bu ameliyatlar optimal tedavi olmasına rağmen, hem rezeksiyon hem de transplantasyon ile ilgili bir takım sorunlar vardır.Böylece ameliyat sırasında atardamarlardaki kan akışını geçici olarak sürdürmek için hepatoduodenal bağdan geçen ve karaciğere girenler de dahil olmak üzere bir takım kan damarları sıkıştırılır (Karimova R.C, Shahmammadova S.O, Hasanova H.A, Isgandarova Z.Sh.,2020).

Hepatik iskemi, geçici de olsa ameliyat sırasında da ortaya çıkar. Ameliyat sonrası dönemde karaciğere gelen hasarlı kan akımı reperfüzyon nedeniyle farklı zaman aralıklarında geri yüklenir (Korkmaz A., Kolankaya D., 2009). Ancak iskemi sırasında dokularda biriken metabolitler kan dolaşımı yoluyla karaciğere dağılır ve bu da reperfüzyon sendromunun gelişmesinde önemli rol oynar (Korkmaz A., Kolankaya D., 2009). Bu sendrom, transplantın reddedilmesine, inflamatuar sürece ve hatta hepatositlerde nekrotik hasara yol açar ve bu da sonuçta nakledilen organın kaderini belirler (Pessayre D., Mansouri A., 2000).İskemik hepatite genellikle, serum transaminaz aktivitesinin diğer nedenleri, başta viral enfeksiyon ve ilaç toksisitesi yokluğunda referans değerlerinde 10 kat artış eşlik eden hipoksik karaciğer hasarı denir (Kerimova R J,Garaev G.Sh.,2013) .Morfolojik olarak tanı, başka değişikliklerin yokluğunda hepatositlerin bariz sentrilobüler nekrozunun saptanmasıyla doğrulanabilir.

Nekroz, patojenik mikropların etkisinin bir sonucu olarak canlı bir organizmadaki hücrelerin, dokuların veya organların hayati aktivitesinin geri dönüşümsüz olarak kesilmesidir. Nekroza mekanik, termal, kimyasal, bulaşıcı ve toksik doku tahribatı neden olabilir. Bu fenomen, alerjik reaksiyon, innervasyon ve dolaşım bozukluklarının bir sonucu olarak ortaya çıkar. Nekrozun şiddeti, vücudun genel durumuna ve olumsuz yerel faktörlere bağlıdır. Nekroz gelişimi, patojenik mikroorganizmaların, mantarların, virüslerin varlığı ile kolaylaştırılır. Ayrıca dolaşım bozukluğu olan bölgede soğutmanın olumsuz etkisi vardır, bu durumda vazospazm artar ve kan dolaşımı daha da bozulur. Aşırı ısınma, metabolizmadaki artışı etkiler ve kan dolaşımının yokluğunda nekrotik süreçler ortaya çıkar. Nekroz belirtileri.

Yanlış kan dolaşımının bir sonucu olarak ciltte solgunluk görülür, cildin rengi yavaş yavaş siyanotik, ardından siyah veya koyu yeşil olur. Alt ekstremitelerde nekroz meydana gelirse, kendini öncelikle hızlı yorgunluk, soğukluk, kasılmalar, yürüme sırasında topallık ve ardından zamanla nekroz olan tedavi edilemez trofik ülserlerin

oluşumu ile gösterir. Vücudun genel durumunun bozulması, merkezi sinir sistemi, kan dolaşımı, solunum sistemi, böbrekler, karaciğer fonksiyon bozukluğu nedeniyle oluşur. Bu durumda, eşlik eden kan hastalıkları ve aneminin ortaya çıkması nedeniyle bağışıklıkta bir azalma vardır (VM Tsyrkunov, VP Andreev, RI Kravchuk, IA, 2016).

Bir doku veya organa giden kan akışı aniden kesilirse, kalp krizi ortaya çıkar. İskemik nekroz terimi, herhangi bir hayati organın (beyin, kalp, bağırsaklar, akciğerler, böbrekler, dalak) nekrozu anlamına gelir. Enfarktüs küçükse, otolitik füzyon veya rezorbsiyon gözlenir ve bunu doku onarımı izler.Kalp krizi doku disfonksiyonuna, çeşitli komplikasyonlara ve hatta ölüme neden olabilir.Karaciğerin yağlı distrofisi, toksik maddelerin, alkol alımının, kötü beslenmenin vb. Etkilerinden kaynaklanır. sırasında ortaya çıkabilir. Bozulmuş metabolizma ve garip bir şekilde, yağların değil karbonhidratların metabolizması karaciğerde yağ birikmesine yol açar. Hücrelerin insüline duyarlılığı azalır, kan şekeri yükselir, kan basıncı yükselir, kan damarlarını kireçlenmeden koruyan kolesterol seviyeleri düşer, trigliserit seviyeleri yükselir, kan kalınlaşır, tromboz eğilimi vardır (Motov S, Yasavolian M, Likourezos A et al.,2017).

Glikoz molekülü büyük olduğu için hücre zarının küçük ve ince kanallarından geçemez. Glikozun hücreye girmesi için insülin hormonuna ihtiyaç vardır. Pankreasta sentezlenir. Hücrelerde yeterli miktarda glikoz bulunmadığından, yağ hücreleri enerji kaynağı olarak karaciğer hücrelerinde birikmeye başlar. Bu yağlı karaciğere yol açar.Karaciğerdeki glikojen depoları ile yağ depoları arasında ters bir ilişki vardır. Birindeki artış diğerinde azalmaya neden olur. Normalde, karaciğerin kuru kütlesinin %5'e kadarı yağdır. Ancak hastalık sonucunda buradaki yağ miktarı %50-60'lara ulaşabilmektedir.

Karaciğerden yağ distrofisinin bozulmuş taşınması şiddetli karaciğer hastalığında meydana gelir Lipotropik faktörlerin ve birkaç çift bağ içeren organik asitlerin eksikliğinin yanı sıra aşırı antilotropik faktörlerin ve kolesterol alımı, gelişme mekanizmasında önemli bir rol oynar.sentez bozulur. Bu durumda nötr yağlar suda kolayca çözünürler, bu nedenle kana kolayca geçerler ve karaciğerde birikirler.Hepatoz, bezdeki metabolik bozukluklarla ilişkili hastalıkların ortak adıdır. Bu hastalık, karaciğerin ana hücreleri olan hepatositlerin yok edilmesinin ilk aşamasıdır. Yağlı hepatozun diğer isimleri hepatik obezite, steatoz ve yağlı karaciğer distrofisidir.Yağlı distrofi iki tipe ayrılır - alkol kötüye kullanımı - alkolik hepatoz ve alkolsüz yağlı hepatoz. Her iki durumda da hepatositlerde biriken yağ damlacıkları sonucunda organ hasarı meydana gelir (Lightsey JM, Rockey D.C., 2017).

Araştırmacılar, hepatik hepatozun ana nedeni olarak insülin direncinde bir azalmaya işaret ediyor.Yağlı hepatozun nedenlerinden biri, bağırsak mikroflorasının ihlali ile karakterizedir.Yağlı hepatoz, karaciğerin yaygın bir kronik patolojisidir. Hastalık ayrıca erken yaşta gelişir. Bunun nedeni çocukların aşırı kilolu olmasıdır.Karaciğer obezitesi alkol alımına göre alkollü ve alkolsüz obezite olmak üzere 2 ana gruba ayrılmaktadır.Alkolsüz obezite gelişmiş ülkelerde sağlık sisteminin güncel sorunlarından biridir. Hastalık, basit hepatik obeziteden inflamatuar steatohepatit, karaciğer fibrozu ve siroza kadar çok çeşitli hastalıkları birleştirir (Olivier de R., Kuno L., Pierre-Alain C., 2009).Hastalığın başlangıcı, aşırı vücut ağırlığı ve metabolik sendrom ile yakından bağlantılıdır. Vücut kitle indeksinin (BKİ) 25 kg/m2'den büyük olması, abdominal obezite, diyabet ve insülin direnci başlıca risk faktörleri olarak kabul edilmektedir.

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INVESTIGATION OF THE PROLINE EFFECT ON IN VITRO REGENERATION OF MEDICINAL EUCALYPTUS CAMALDULENSIS AGAINST SALT STRESS

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Abstract

Eucalyptus has traditionally been used for the treatment of asthma, shortness of breath, rheumatism and hemorrhoids, as well as toothache relief, expectorant, antiparasitic. The responses of plants to salt stress vary greatly according to environmental factors and especially genotype. As with many other stress factors, salt stress causes an increase in the amount of some enzymes, polyamines and amino acids. The responses of plants to salt stress vary greatly according to environmental factors and especially genotype. As with many other stress factors, salt stress causes an increase in the amount of some enzymes, polyamines and amino acids. The role of proline amino acid is especially important in terms of salt resistance, and it is known that many salt-tolerant plant species have a higher proline amount when compared to the sensitive ones. Proline is an amino acid with protective properties, the amount of which increases under stress conditions, participates in the detoxification of free oxygen radicals and plays an important role in resistance to stress conditions. The current work aimed to investigate the proline effect on *in vitro* regeneration of *Eucalyptus camaldulensis* against salt stress. When compared to the control group (no NaCl), the best proliferation rates were obtained from WPM medium supplemented 100 mgL^{-1} proline after 25, 50, 100 mM salt applications.

Keywords: Medicinal plants, NaCl, proline, salt stress, tissue culture

Introduction

Eucalyptus camaldulensis Dehnh, belonging to the Myrataceae family, is an evergreen, woody plant in the form of tall trees or shrubs that grows intensively in the coastal regions of the Aegean and Mediterranean (Butcher et al., 2001, p. 402-412). Eucalyptus wood, which is used in a wide variety of fields from perfumery to pharmacy, from swamp drying to the construction sector, is also used in herbal dyeing (Thorburn & Walker, 1994, p. 293-301; Kaya et al., 2013, p. 608-618).

The increasing or decreasing in optimum environmental conditions limits the growth and development of the plant. These undesirable adverse conditions are called stress. Stress factors that cause many regressions resulting in low yield in the plant are classified in two ways as abiotic and biotic. Salinity stress, which is the subject of this study, is one of the important abiotic stress factors that limits plant productivity all over the world (Kwon et al., 2019, p. 831-839; Ozkaya & Kaya, 2021, p. 176-179).

In plants as well as in all living things, it is possible to collect antioxidants developed against the harmful effects of free oxygen radicals divided into two groups under stress conditions. These are enzymatic and non-enzymatic antioxidants. The main protective enzymatic antioxidants in the plant cell are: superoxide dismutase, peroxidase, catalase, ascorbate peroxidase and glutathione reductase et al. Superoxide dismutase (SOD) enzyme is an enzyme that catalyzes the conversion of superoxide radical to hydrogen peroxide and oxygen (Elavarthi & Martin, 2010, p. 273-280). Catalase (CAT) oxidizes the substrate using H_2O_2 as an electron scavenger and converts H_2O_2 to O_2 and H_2O. This enzyme is mostly found in the peroxisome in higher plants (Silva et al., 2019, p. 1-12; Jamshidi Goharrizi et al., 2020, p. 459-473). Catalase is one of the most important enzymatic antioxidants in protecting cells against stress by directly converting harmful H_2O_2 formed under stress conditions to H_2O and O_2. Catalase is mostly found in peroxisomes and very little in the mitochondrial matrix (Elavarthi & Martin, 2010, p. 273-280; Ozkaya & Kaya, 2021, p. 176-179).

In this study, the effects of proline added to *in vitro* grown *E. camaldulensis* cultures were investigated for against salt stress applied at different concentrations. The each concentration of salt treatments with 100 mL^{-1} proline was investigated as separately. Another aim of the current study is to determine the effective gene expressions in the molecular pathways at the mRNA and protein level in the future after the application of proline against salt stress. In this context, the current study is a preliminary study of the applications to be made in the future.

Method

Plant material & in vitro culture establishment

In vitro culture establishement were carried out with a modified form of the surface sterilization methods developed by Ozudogru et al. (2011, p. 309-320) and Kaya et al. (2020, p. 99-104) of samples taken from *E. camaldulensis* fresh shoots. The difference of the applied modified method from the other two methods is that commercial bleach is applied separately for 5 (5%) minutes and 10 (5%) minutes. After surface sterilization, the samples were transferred to MS nutrient medium (Murashige & Skoog, 1962, p. 473-497) supplemented with 1% sucrose, benzyladenine (0,04 mg L^{-1}), gelrite (1,5 g L^{-1}), agar (4.5 g L^{-1}), and also supplemented with charcoal (10 g L^{-1}) (Kaya et al., 2013, p. 608-618) and the samples incubated at standart growth room condiditions (Kaya et al., 2017, p. 242-248).

Proline and NaCl treatments

The 0,5mm shoot tips were cut from the *in vitro* grown *E. camaldulensis* shoots. The shoot tips were treated with WPM (Woody Plant Medium, Lloyd & McCown, 1981, p. 421-427) medium adding 0 (control), 25, 50 and 100 mM NaCl and also whole treatments were tried with adding 25, 50 and 100 mgL^{-1} proline, each treatment was investigated as separately.

Statistical analyses

The all treatments (control and investigated groups) were repeated at least three times. Regeneration percentages were compared by multiple X^2 test by the SPSS program (IBM

SPSS Statistics 21.0) and statistical analysis was also performed with ANOVA, followed by the LSD test at $p \leq 0.05$ (Marascuilo & McSweeney, 1977, p. 141-147; Kaya et al., 2021, p. 199-207).

Results

When compared to the control group and salt applications, against the salt stress applied at all concentrations, regeneration was obtained in the samples to which proline was added (Figure 1). In *in vitro* cultures of all *E. camaldulensis*, 100mgL^{-1} proline gave the best regeneration results in all salt applications (Figure 2).

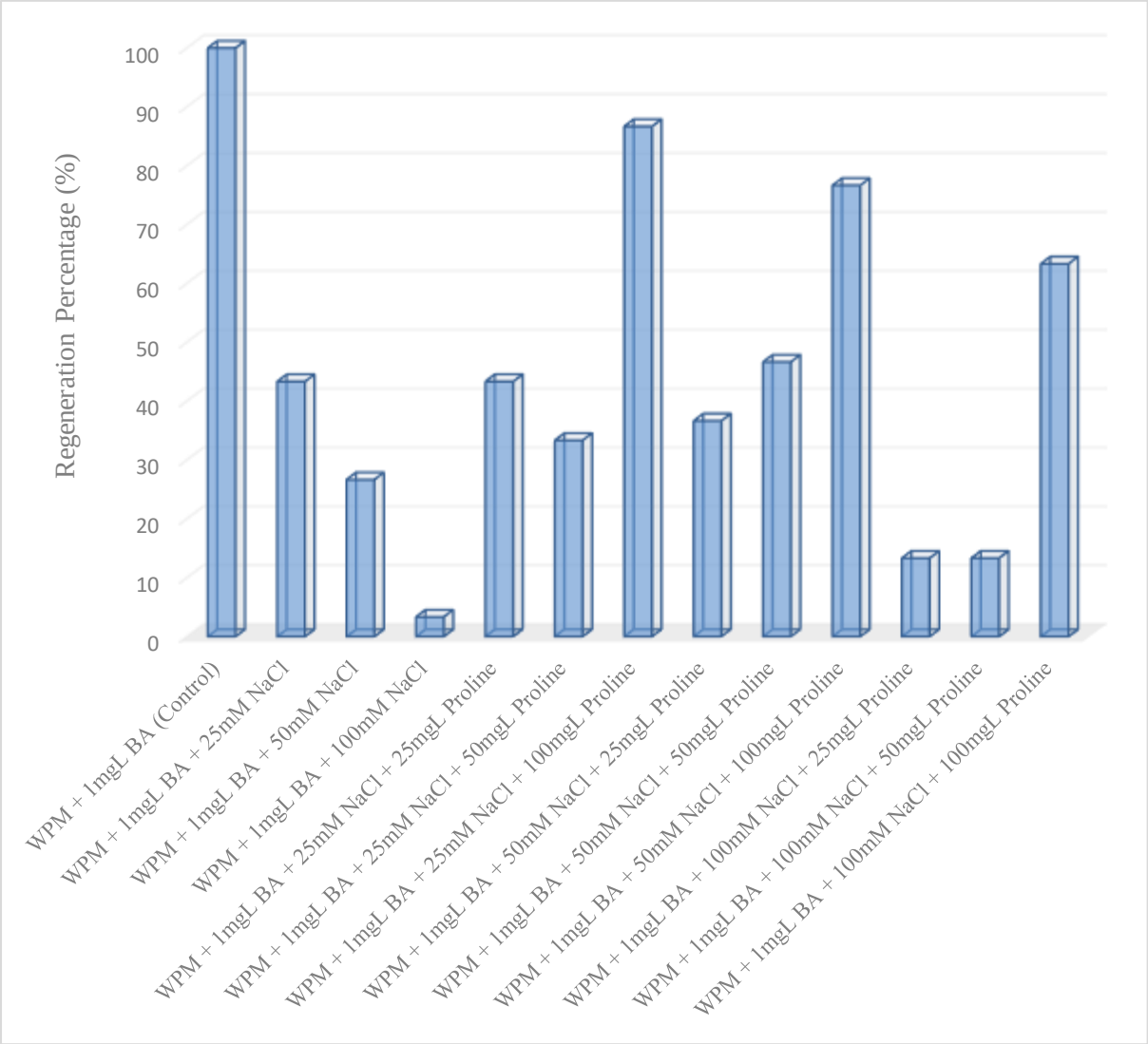

Figure 1. The graph of the regeneration percentages obtained after proline application compared to control group and salt applications.

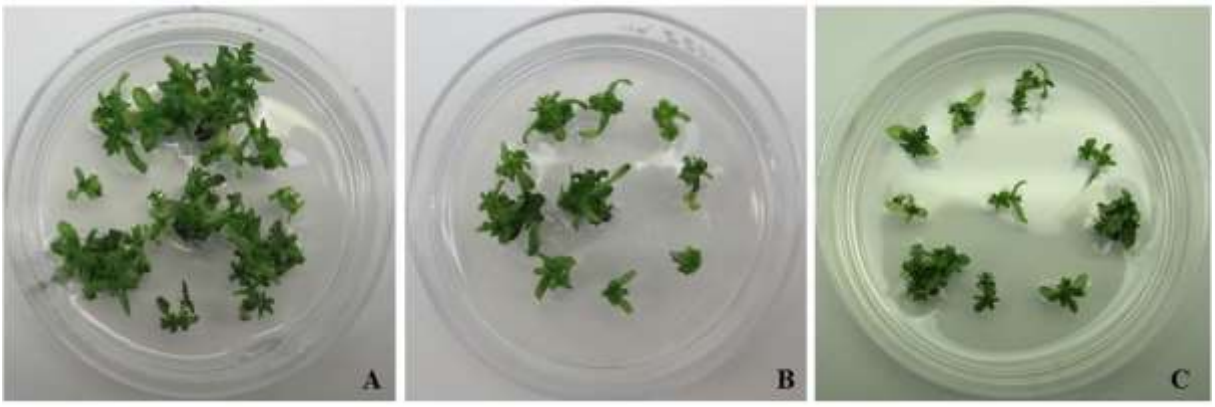

Figure 2. *In vitro* shoot tip regenerations of *E. camaldulensis* treated with 100mgL^{-1} proline with 25mM (A), 50mM (B), and 100mM (C) NaCl.

Discussion

As with many other stress factors, salt stress causes an increase in the amount of some enzymes, polyamines and amino acids (Baek & Skinner, 2012, p. 34-40). The role of the amino acid proline is especially important in terms of salt resistance, and it is known that many salt-tolerant plant species have higher proline content compared to the sensitive ones (Woodward and Bennett, 2005). Proline; It is an amino acid with protective properties, the amount of which increases under stress conditions, participates in the detoxification of free oxygen radicals and plays an important role in resistance to stress conditions (Baek & Skinner, 2012, p. 34-40). Similarly, in the current study, increased proline treatments against salt stress in the *in vitro* cultures of *E. camaldulensis* had a positive effect on plant growth and shoot formation.

Conclusion

In the literature, there are many studies on the treatment of many different substances, such as different medium and sugar combinations (Akdemir et al., 2010, p. 268-275), liquid and solid culture applications (Ozudogru et al., 2013, p. 77-78; Kaya et al., 2018, p. 5-10), different plant growth regulators (Kaya et al., 2010, p. 283), environmental factors, cold (Ozkaya et al., 2021, p. 130), and medium components (Ozkaya et al., 2019, p. 192-197; Kaya et al., 2021, p. 199-207; Kivrak Kiran et al., 2021, p. 285-292) on plant growth and regeneration at the *in vitro* level. Salt stress; It is a complex abiotic stress that limits the usable water content with its osmotic effect and causes the ion content to reach toxic levels with its ionic effect. Therefore, in order to understand the effects of salt stress on plants and the salt tolerance mechanisms of plants, the effects of both osmotic and ion stress on the whole plant, tissue and cellular level should be examined at the level of morphological, physiological, biochemical and molecular mechanisms.

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EXTRACTION AND CHARACTERIZATION OF CASTOR (*RICINUS COMMUNIS* L) SEED OIL

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Abstract
The purpose of the study was to investigate the phyto-constituents present in castor seed oil and to evaluate the quality of the oil. For the evaluation of oil quality, physico-chemical parameters were checked according to official standard methods. The physical properties of castor seeds were assessed: moisture content, 6.1%, medium length, 15.2 mm; width, 9.3 mm; thickness, 5.4 mm; and a one hundred seeds were 41.2 g; arithmetic mean diameter, 9.96 mm; geometric mean diameter, 9.14 mm; sphericity, 60%; surface area, 262.3 mm^2; volume, 0.39 cm^3; true density, 811 Kg/m^3; bulk density, 387.1 Kg/m^3 , porosity, 53% and percentage of castor oil 53%. The extraction of oil from castor seeds was carried out in a Soxhlet type device using light petroleum solvent. Phytochemical studies of oil have confirmed the presence of alkaloids, terpenoids, tannins, steroids and saponins and reducing sugars have been found to be absent. The oil obtained was investigated for physic-chemical parameters and fatty acid composition. The determined parameters were as follows: specific gravity 960 Kg/m^3, viscosity 40ºC 247 mm^2/s, refractive index 1.4789, acid value 1.37 mg KOH/g, FFA 0.689%, iodine value 82.75 mg I_2/100 g, saponification value 184 mg KOH/g, peroxide value 9.8 mEq O_2/Kg and induction period 30.4 h. Gas chromatography showed that the main fatty acids were ricinoleic, 80.4%, oleic, 5.14% linoleic, 4.53%, palmitic, 2.57%, linolenic, 2.5% and stearic 2.25%.

Key words: *Ricinus Communis* L seed, oil, phyto-chemical screening, physio-chemical characteristics

INTRODUCTION

Ricinus communis L is a plant belongs to the family Euphorbiaceae which is a soft-wooded small tree widespread throughout tropics and warm temperature regions of the world. It is an important oilseed crop that produces an oil rich in ricinoleic acid, which confers unique properties to the oil (Rojas et al., 2004; Velasco et al., 2005; Zhang et al., 2005; Kadri et al., 2011).
Ricinus communis L. has become a highly versatile and promising crop in recent decades in terms of its highly profitable agroenergy (Andre et al., 2018).
Although the castor oil is not edible oil, it is more versatile than other vegetable oils as the castor oil is widely used as a starting material for many industrial chemical products because of its unique structure. The castor oil is one of those vegetable oils that have found usage in many chemical industries. It is the raw material for many chemical products and also as the additives in drugs. The usage of castor oil can be divided into industrial, food, medicine and also biodiesel and biofuel industries (Wan, 2012).

MATERIALS AND METHODS

The castor seeds were collected from local farmers from Dolj-Romania area. Seeds were harvested from mature plants cultivated in field, dried, crushed and seeds were separated. The cleaned seeds were oven dried at 90°C to a constant weight to reduce the moisture content. The dried seed was ground using blender to achieve uniform particle size. The castor oil was obtained via Soxhlet extraction.

Physical properties of castor seeds

Were selected random 100 seeds castor. For each seed, the three principal dimensions including length (L), width (W) and thickness (T) were measured using an micrometer. Some dimensional properties of seeds were calculated based on the length, width and thickness.
The arithmetic mean diameter (Da, mm) and the geometric mean diameter (Dg, mm) of the seeds were calculated using Eqs. (1) - (2) (Mohsenin, 1978; Baryeh, 2001; Koocheki et al., 2007; Dumitru and Tutunea, 2017; Mansouri et al., 2017):

$$Da = \frac{L+W+T}{3} \qquad (1)$$

$$Dg = (LTW)^{\frac{1}{3}} \qquad (2)$$

The sphericity of the seeds is determined using Eq. (3) (Mohsenin, 1978; Baryeh, 2001; Ayidin, 2003; Koocheki et al., 2007; Dumitru and Tutunea, 2017; Mansouri et al., 2017):

$$\emptyset m = \frac{(\mathrm{LWT})^{\frac{1}{3}}}{\mathrm{L}} \times 100 \qquad (3)$$

Surface area (Sa) and volume (V) of the particle were calculated using Eqs. (4) - (5) (Dumitru and Tutunea, 2017; Mansouri et a., 2017):

$$Sa = \pi(D_g)^2 \qquad (4)$$

$$\mathrm{V} = \frac{\pi(Dg)^3}{6} \qquad (5)$$

Determination of the density of castor seed
True density is the ratio of the mass of the sample to the true volume of the particles ie excluding the volume of any internal pores.
Determination of weight of seeds were done by weighing with an analitic balance.
The seed volume was determined using the liquid displacement method. Toluene (C_7H_8) was used in place of water, because it is absorbed by seeds to a lesser extent and its surface tension is low, so that it fills even shallow dips in a seed and its dissolution power is low. A standard pycnometric method was used to determine the volume of weighed samples (Mohsenin, 1978; Ogut, 1998; Dumitru and Tutunea, 2017).
The volume (V, in m^3) was calculated using Eq. (6) (Mohsenin, 1978; Mansouri et al., 2017):

$$V = \frac{M_{td}}{\rho_{tol}} = \frac{(\mathrm{M_{ps}} - \mathrm{M_p}) - (M_{pts} - M_t)}{\rho_{\mathrm{tol}}} \qquad (6)$$

where: *Mtd* is unit mass of seed, *Mt* is mass of pycnometer filled with toluene; *Mp*, mass of pycnometer; *Mpts*, mass of pycnometer filled with toluene and sample; *Mps*, mass of pycnometer and sample; and ρt, density of toluene. The true density (ρt, in Kg/m^3) of castor seed was obtained by the following Eq. (7):

$$\rho_{true} = \frac{M_{ps} - M_p}{V} \qquad (7)$$

where: ρ_{true} - true densite, Kg/m^3; *Mps* - mass of pycnometer and sample; *Mp* - mass of pycnometer.

Bulk density, ρ_b, is based on the volume occupied by the bulk sample as poured into a container of known volume. The seeds were not compacted in any way. The ratio of the mass and volume was expressed as bulk density.

The porosity, ε, was calculated from the measured values of bulk density (ρb) and true density using Eq. (8) (Mohsenin, 1978; Baryeh, 2001; Koocheki et al., 2007; Dumitru and Tutunea, 2017; Mansouri et al., 2017):

$$\varepsilon = \left(1 - \frac{\rho_b}{\rho_t}\right) 100 \qquad (8)$$

Determination of moisture content of the castor seeds. The initial moisture content of castor seeds was determined by using the moisture analyzer (Mx-50), based on the principle of thermogravimetric analysis, dries up a sample using a halogen lamp and obtains the moisture content in % and results by the difference between the wet weight and dry weight.

Extraction of oil from castor seeds. The extraction of oil from castor seeds was carried out in a Soxhlet-type device using light petroleum solvent. The extraction time was 6 h. After oil extraction, the excess solvent was distilled off reduced vacuum using a rotary evaporator (SR13256/86; Bita and Preda, 2005; Dumitru, 2016).

Characterization of oil obtained from castor seeds

Phytochemical Screening. Different chemical tests were carried out on seeds oil sample by using authentic or standard method for the identification of chemical constituents (Shahid et al., 2016).

Detection of Alkaloids. The detection of alkaloid was done by method which is proposed by Trease and Evans, 1989. Two mL of oil and 1 mL of Dragondroff's reagent was taken in china dish. Appearance of reddish brown coloration detects the presence of alkaloid (Shahid et al., 2016).

Detection of Tannins. About 1mL of oil was boiled in 20 mL of distilled water, filtration was done after boiling and then few drops of 0.1% freshly prepared ferric chloride was added in filtrate. A bluish black or brownish black color indicates the presence of tannins (Edeoga et al., 2005; Shahid et al., 2016).

Detection of Flavonoids. Appearance of yellow coloration indicates presence of flavonoids in each method. A portion of filtrate was taken in beaker and then few drops of aluminium chloride were added. A yellow color detects flavonoids in given sample (Edeoga et al., 2005; Shahid et al., 2016).

Detection of Steroids. Two mL of acetic anhydride was added in 1mL of seed oil in beaker. 2 mL of concentrated sulphuric acid was added in it. The color changing from violet to blue or green detects presence of steroids (Shahid et al., 2016).

Detection of Saponins. 2 mL of castor oil was boiled in 20 mL distilled water in water bath and filtered, after this, the 5 mL distilled water was added in filtrate and shaken for stable froth. The frothing was mixed with three drops of olive oil, froth formation indicate the presence of saponins (Edeoga et al., 2005; Shahid et al., 2016).

Detection of Reducing Sugar. Detection of reducing sugar is also called as Fehling test. According to this method the appearance of red or violet coloration indicates the presence of reducing sugar. Seed oil (1 mL) and 5 mL of distilled water were taken in beaker and a few drops of Fehling solution was added to it and heating is required for some time to detect presence or absence of reducing sugar (Khan et al., 2011; Shahid et al., 2016).

Fatty acid compositions. The fatty acid compositions were investigated using apparatus Focus GC gas chromatograph coupled with DSQ II quadrupole mass spectrometer, Fig. 1.

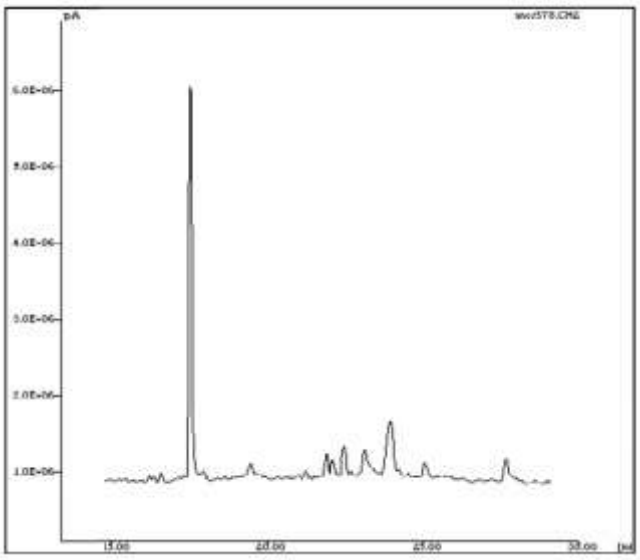


Fig. 1. Chromatographic analysis of castor oil

1 µL of oil was analyzed on Focus GC gas chromatograph coupled with DSQ II quadrupole mass spectrometer. Column used for analysis was a capillary column, Thermo TR-WaxMS with 0.25 µm in thickness, 0.25 mm ID and 30 m length. The column oven temperature was programmed to 270°C through the following steps: 40°C to 100°C at a rate of 5°C·min^{-1}, held at 100°C for 5 minutes, 100°C to 200°C at the rate of 10°C·min^{-1}, held at 200°C for 7 minutes and the last steps was 200° to 270°C at the rate of 8°C·min^{-1}. The column was maintained at 270°C for 13 minutes. During the analysis process the injector temperature was set at 200°C. The interface temperature between GC and MS was kept at 260°C and the ion source was set at 220°C and 70 eV ionization energy of impact ionization was used to fragment the elements from capillary column (Dumitru and Tutunea, 2017).

Determination of density. The density was determined at 25±0.5°C using a 50 mL bottle pycnometer that was washed thoroughly with detergent, water and petroleum ether according to method described in ASTM D792, ISO 1183 (Dumitru and Tutunea, 2017).

The refraction Index. The establishment of refraction index, (Ir), was done with the aid of Abbe refractometer Abbe (Dumitru (Bita) and Grecu, 2010; Dumitru and Tutunea, 2017).

Determination of acid value and free fatty acid value. The acid value of the oil sample was determined using ASTM method (ISO 660/1183) and the free fatty acid calculated.Twenty five milliliter diethyl ether with 25 mL alcohol and 1 mL phenolphthalein solution (1%) was mixed and carefully neutralized with 0.1 M NaOH. One to ten gram of the oil was dissolved in the mixed neutral solvent and titrated with aqueous 0.1 M NaOH, shaken constantly until a pink color which persists for 15 sec was obtained. The acid value was calculated using Eq. 9 (Dumitru (Bita) and Grecu, 2010; Egboubu et al., 2015):

$$Acid\ value = \frac{Titre\ (mL) \times 5.6}{Weight\ of\ sample} \qquad (9)$$

The free fatty acid value was calculated from the relation:

Free fatty acid, % = Acid value×0.503

The iodine value. The iodine value represents the quantity of iodine, expressed into grams, which is added by 100 g of lipids. It is a measure of the unsaturated fatty acids grade which enters in the structure of animal and vegetal lipids.

The iodine value was calculated using the Hanus method. The iodine value was calculated according to Eq. 10 (Dumitru (Bita) and Grecu, 2010; Dumitru and Tutunea, 2017):

$$I_i = \frac{(V_m - V_p) \times t \times f \times 100}{m_p} \qquad (10)$$

where: Vm - volume of the solution of sodium thiosulphate 0.1 N used in the titration of sample control, mL; Vp - volume of the solution of sodium thiosulphate 0.1 N used in the titration of analysed sample, mL.; t - titre of the solution of sodium thiosulphate 0.1 N in relation with the iodine (0.01269 mg/mL); f - factor of the solution of sodium thiosulphate 0.1 N; m_p - mass of the analysed sample.

Saponification index. The saponification index (Is) represents the quantity of potassium hydroxide expressed in miligrams, necessary for the saponification of fatty acids from a gram of fat. The saponification index is calculated using Eq. 11 (Dumitru (Bita) and Grecu, 2010; Dumitru and Tutunea, 2017):

$$I_s = \frac{(V_m - V_p) \times t_{KOH}}{m_p} \qquad (11)$$

where: t_{KOH} - titre of the solution of KOH = 28.055 mg KOH/mL; m_p - mass of sample submitted to the saponification, g; V_m - volume of the solution of KOH used in the titration of sample control, mL; V_p - volume of the solution of KOH used in the titration of analysed sample, mL.

Peroxide value. The standard method prescribed by the Association of Official Analytical Chemists was performed to measure the peroxide value. In this procedure, the oil samples weighing 2 g were taken individually in different conical flasks and then a solution of acetic acid and chloroform in the ratio 3:2 is added. Later, the solution of saturated potassium iodide of 0.5 mL is mixed up with samples in every flask. All the flasks are then undisturbed for 5 minutes. Now the distilled water measuring 15 mL is added to each flask and then titrated with a sodium thiosulfate solution of 0.1 N until the yellowish color disappears. Finally, 0.5 mL of starch is added and the titration is continued till the end point where the mixture turns colorless. The peroxide values calculated using Eq. 12 (Madhavi et Deva, 2014; AOAC 2015; Dumitru and Tutunea, 2017):

$$Peroxide\ values = \frac{(V_2 - V_1) \times T \times 1000}{m} \qquad (12)$$

where:V_1- volume of 0.1N blank; V_2 - volume of 0.1N $Na_2S_2O_3$; T - normality of $Na_2S_2O_3$ (0.1N); m - mass of oil taken.

Induction period stability through the Hadorn-Zürcher method (Rancimat)

This method consists in the oil oxidation in accelerate conditions. The method permits the establishment of the induction period, which corresponds, with the initiation step of the oil auto-oxidation. To determine the stability in oxidation it was used an installation, which used oxidized oil samples (10 g) at a temperature of 110°C (Dumitru, 2016). Through the oil samples, it was bubbled air with a debit of 8 L per hour. Because of the oxidation reactions, which take place in a reactor, the formed volatile acids are trained by the air current and absorbed in the measurement cell where there is bidistilled water. The measurement of the solution conductibility is done with a conductometer of Radelkis type. In the beginning, we notice a slow increasing of the solution conductibility, after that it appears a sudden increasing of this because of the formation of volatile acids. The induction period is considered the interval until the moment of the suddenly curve's change.

RESULTS AND DISCUSSION

Phytochemical screening

The phytochemical analysis conducted on the seed oil is presented on Table 1. Castor contains different secondary metabolites (phytochemical) with biological activity that can be of medicinal values. The qualitative phytochemical analysis of the oil extracts indicates the presence of alkaloids, terpenoids, steroids, saponins. Reducing sugars are absent in the seed oil. This is in agreement with reports from Shahid, 2016.

Table 1. Phytochemical constituents analysis of castor seeds oil

Phytochemical constituents	Castor seeds oil	Phytochemical constituents	Castor seeds oil
Alkaloids	+	Steroids	+
Terpenoids	+	Saponins	+
Tannins	+	Reducing sugar	–

Physical properties of seeds and oil

Physical properties of seeds are necessary for the design of equipment to handle, transport, process and store the crop. Physical properties of castor seeds were determined at moisture content level of 6.1%, Table, 2.

The oil yield of castor seed oil was found to be 53% (wt/wt).

The result obtained from the percentage oil content 53% fall within the range of the percentage oil content (30 - 55%) of castor beans found in literature (Akpan et al., 2006; Swaroopa and Vajbhac, 2013; Panhvar et al.,2016; Baeza-Jimenez et al., 2017; Arawande and Akinnusotu, 2018).

We noticed that castor seeds have higher oil content compared to soybean seds (18.3%); rapeseed (38.6%); sunflower (40.9%); groundnut (40.3%); cottonseed (15.1%); palmkernel (44.6%); sesame (42.4%); linseed (33.5%) (Gunstone, 2002).

Table 2. Values of physic-chemical analysis of castor seeds and oil

Seeds		Oil	
Properties	*Value*	*Properties*	*Value*
Moisture content, % (w.b.)	6.1	Porosity, Ɛ, %	53
Length, mm	15.2	100 seed weight, g	41.2
Width, mm	9.3	Percentage of castor oil, %	53
Trickness, mm	5.40	Density, Kg/m3	960
Arithmetic mean diameter, mm	9.96	Viscosity 40°C, mm^2/s	247
Geometric mean diameter, mm	9.14	Refraction Index	1.4789
Sphericity, %	60	Acid value, mgKOH/g	1.37
Surface area, mm^2	262.3	Free fatty acid, %	0.689
Volume, cm^3	0.39	Iodine value, $mgI_2/100g$	82.75
True density, Kg/m^3	811	Saponification value, mg KOH/g	184
Bulk density, Kg/m^3	387.1	Peroxide value, mEq O_2/Kg	9.8
-	-	Induction period, h	30.4

Fatty acid compositions

Castor oil is unique among vegetable oils because it is the only commercial source of a hydroxylated fatty acid (ricinoleic acid) (Jumat et al., 2010), Fig. 2.

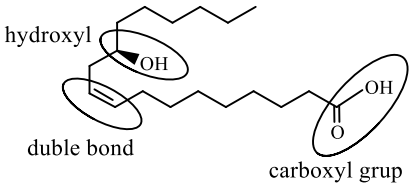


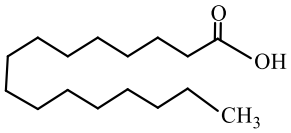
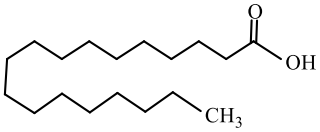
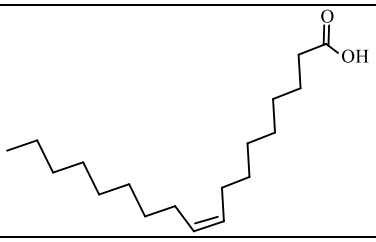
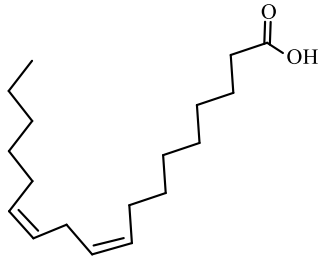
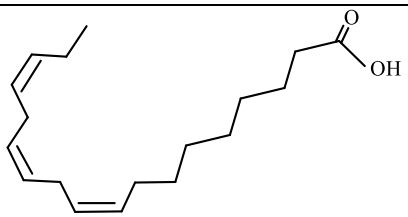
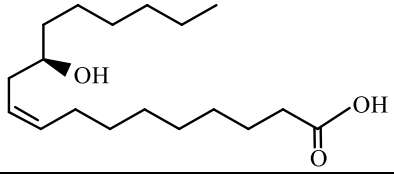
Fig. 2. Ricinoleic acid

Many publications reported that ricinoleic acid is a major component in castor oil. This oil contains around 90% of ricinoleic acid in its composition (Jumat et al., 2010; Silva et al., 2014; Da Pontea et al., 2015; Sanchez et al., 2015; Baeza-Jimenez et al., 2017).

The presence of a hydroxyl group on C-12 of ricinoleic acid makes castor oil unusually polar, thus promoting hydrogen bonding. This accounts for the oil's unique combination of physical properties such as high viscosity, high specific gravity, high boiling point (313^0C), excellent solubility in alcohols, (castor oil's excellent solubility in methanol makes it ideal for biodiesel production) (Yusuf et al., 2015).

Table 3 shows the fatty acid composition of Castor seed oil. The most predominant fatty acid was ricinoleic acid, with value of 80.4%.

Table 3.

Fatty acid	Structure of fatty acid	Percentaje, %
Palmitic C16:0		2.57
Stearic C18:0		2.25
Oleic C18:1		5.14
Linoleic C18:2		4.53
Linolenic C18:3		2.5
Ricinoleic C18:1OH		80.4

Composition of castor oil

Density, refractive *index and viscosity* of castor oil were calculated as 0.960 Kg/m^3, 1.4789 and 247 $mm^2 \cdot s^{-1}$, respectively. Values fall within the range specified in literature (Akpan, 2006; Jumat et al., 2010; Abdelaziz et al., 2014; Silva et al., 2014; Da Pontea et al., 2015; Sanchez et al., 2015; Yusuf et al., 2015; Mensah et al., 2018). The high viscosity of castor oil in comparison to other edible oils is possibly due to chain length, hydroxyl group of its fatty acids and hydrogen bonding among the hydroxyl groups. Castor oil possesses long chain carbon atoms and hydroxyl group on 12th carbon in ricinoleic acid (Panhwar, et al., 2016). *Low acid value* 1.37 mg KOH/g suggest low free fatty acid (FFA) content in the oil 0.689%. Acid value is a measure of the FFA content in an oil.

Peroxide value of oil is an important parameter that checks the extent of rancidity of oil. High values of peroxide for oil relate its oxidation. PV for the castor oil was found at 9.8 mEq O_2/Kg. The presence of the hydroxyl group on the castor oil is adding the extra stability to the castor oil and also preventing the formation of hydroperoxides (Wan, 2012).

Low iodine value observed for the oil (82.75 mg I_2/100 g is suggestive of low unsaturation level typical of non-drying oils. This means that the oil may not be suitable as alkyd resin for paint formulation or used as vanishes, though it could be used as lubricant or hydraulic brake fluid (Yusuf et al., 2015).

Relatively high saponification value of 184 mg KOH/g indicates that the oil has the potential to be used in the soap and cosmetics industries. *Oxidation of lipids* is a major cause for deterioration of the quality of edible oils; it is the cause of important deteriorative changes in their chemical, sensory and nutritional properties. To get of castor seed oil oxidative stability, we decided to determine the induction period by Rancimat test (Dumitru, 2016). The induction time, evaluated by the Rancimat method is 30.4 h at 110°C.

Castor oil and many of its derivatives are stabilized by the hydroxyl group, which is beta to the double bond. This hydroxyl group protects the double bond by preventing the formation of hyper peroxides sterically and inductively preventing the formation of peroxides, the intermediate chemical species that form the oxidation of double bonds (Omprakash et a., 2018). Values of acid value, peroxide value, iodine value, saponification value and induction time fall within the range specified in literature (Akpan et al., 2006; Jumat et al., 2010; Abdelaziz et al., 2014; Yusuf et al., 2015; Harhar et al., 2016; Mensah et al., 2018).

The chemistry of castor oil is focused on its high content of ricinoleic acid and also the other three points of function that exist in the castor molecule. One of the molecule functions is the carboxyl group that can give a huge and wide range of the esterifications. Second one is the

single points of unsaturation which can be altered using the hydrogenation process or the epoxidation process or the vulcanization process. The last one is the hydroxyl group in the castor oil can be acetylated or alkoxylated maybe can be remove from the oil molecule by using the dehydration process to increase the unsaturation of the oil compound to provide the semi-drying castor oil (Andre et al., 2018).

CONCLUZII

Ricinus communis L oil is of importance to chemical industry because it is the only commercial source of a hydroxylated fatty acid. Gas chromatography of oil has confirmed the presence of high percentage of ricinoleic acid 80.4% followed by oleic, 5.14%; linoleic, 4.53%; palmitic, 2.57%; linolenic, 2.5% and stearic 2.25%. The raw material can be used for the production of several products, including biodiesel, lubricants, plastics materials, paints, foam products, varnishes, pharmaceuticals products, and food products.

Ricinus communis L also has tremendous future potential as an industrial oil seed crop because of its high seed oil content (53%) and ability to be grown under drought conditions.

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TREATMENT OF INFANTILE HEMANGIOSIS WITH PROPRANOLOL

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Abstract

Propranolol((2RS)-1-(Naphtalen-1-yloxy)-3-(propan-2-ylamine) propan-2-ol hydrochloride) is the first generation of β-blocker family introduced for the first time by British scientist Sir James Black. The main indication is for treatment of hypertension. But it is also indicated to treat angina pectoris, atrial fibrillation, myocardial infarction, migraine, essential tremor, hypertrophic subaortic stenosis, pheochromocytoma. It is worth noting that even today, newer indications of this drug are being discovered such as application to proliferating infantile hemangioma. Infantile hemangiosis is one of the most common infantile benign vascular tumors, affecting 4–10% newborns. The aim of this review includes a discussion of the different treatment methods of infantile hemangiosis. The main requirement for threatening infantile hemangiosis is only active observation because of their natural course. However, some of cases with complications are needed of immediate treatment. The basic treatment includes systemic and topical medications with β-blockers most specifically propranolol. In some cases, combined therapy might be recommended involving surgical treatment after reducing of size of hemangioma.

Keywords: β-blocker, propranolol, infantile hemangioma

Introduction

Infantile hemangiomas (IH) are the most common benign vascular tumors in infancy.[1] The diagnosis and treatment of IH represent a difficult and challenging task. The main effort seems to be related to the precise assessment of a multidisciplinary team from neonatologists, pediatricians, pediatric cardiologists, dermatologists, and pediatric surgeons. Unlike other tumors, they have the unique ability to involute after proliferation, often leading primary care providers to assume they will resolve without intervention or consequence. [2] Therapeutic strategies include personal treatment according to the size of lesion, morphology, location, and possibility of potential complications. There are many classifications of hemangiomas depending on the shape, size and location. The most widely accepted classification of vascular anomalies is that adopted by the International International Society for the Study of Vascular Anomalies (ISSVA) and presented in Table 1. [2]

Table 1. Classification of Cutaneous Vascular Anomalies, 2014, (Approved at the 20th ISSVA Workshop, Melbourne, April 2014, last revision May 2018).

Vascular malformations
Venous malformations
Lymphatic malformations
Capillary malformations
Arteriovenous malformations and fistulae
Mixed (combined) malformations
Vascular tumors
Benign
Infantile hemangioma (IH)
Congenital hemangioma (rapidly involuting [RICH]; non-involuting [NICH])
Lobulated capillary hemangiomas (LCH) (pyogenic granuloma)*
Tufted angioma (TA)
Others
Locally aggressive
Kaposiform hemangioendothelioma (KHE)
Kaposi sarcoma
Others
Malignant
Angiosarcoma
Others

Infantile hemangiomas (IHs) are determined as the most common benign vascular tumors and present in up to 4-5% of children [3,4] Other studies reported that IH occurs in 1% to 3% of newborns [5,6]. The frequency of IH is higher in females, the ratio between females and females is biased towards the male sex: it is estimated to be 3:1 to 5:1 or the newest range from 1,4:1 to 3:1. [7,8]

Aim

The aim of this review includes a discussion of the treatment methods of infantile hemangiomas.

Results

Treatment of IH may include conservative medical therapy and surgical therapy. On the other hand, conservative treatment can be locally and systemically applied. Hemangioma regression has been observed for the first time after corticosteroids application to patients with hemangioendothelioma and thrombocytopenia through 1950-1960. [9]

In 1967 Zarem and Edgerton have treated seven children with Prednisolone tablets for reduction of hemangioma lesions. The all seven patients did well posttherapeutically with break down the hemangioma and regression of lesions. [10] After this success the authors reported for safety and effective treatment of IH by intralesional application of corticosteroids.[11,12]

In 2008, Léauté-Labrèze et al. accidentally discovered the therapeutic effect of propranolol for IH and the safety profile was found to be acceptable. They reported on the experience of treating thirty-two infants with severe IH while studying the use of propranolol for the treatment of IH, adhering to a dosing regimen of 2 to 3 mg / kg per day two or three times daily. [13,14] .

Propranolol has been extensively used for the management of medical complicated and significant cases of IH. Although the exact mechanism of its effect is not known, propranolol is known to work through several mechanisms including vasoconstriction, angiogenesis and

NO inhibition and regulation of renin-angiotensin system. Some studies recommend the duration of treatment with propranolol to be 3 or 12 months to full regression of tumor. [15,16]

McMahon et al., reported significant results treating superficial hemangioma with timolol maleat. [17]

Propranolol is a safe drug, but it has been associated with adverse events such as cardiogenic shock, sinus bradycardia, hypotension, heart failure, asthma bronchiale, bronchospasm. There are data for risk of hypoglycemia and even unconsciousness. [18]. Thus, the parents must follow instructions of adherence very strongly.

CONCLUSION

The main requirement for threatening infantile hemangiosis is only active observation because of their natural course. However, some of cases with complications are needed of immediate treatment. The basic treatment includes systemic and topical medications with β-blockers most specifically propranolol. In some cases, combined therapy might be recommended involving surgical treatment after reducing of size of hemangioma.

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A NEW APPROACH TO THE EARLY DIAGNOSIS OF INFLAMMATORY DISEASES OF THE COLON

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Abstract

The term inflammatory bowel diseases (IBD) refers to a group of idiopathic, chronic intestinal diseases characterized by a diffuse infiltration of inflammatory cells into the lamina propria of the intestine. The pathogenesis of IBD is unknown. The most common signs described are diarrhoea, vomit, and progressive weight loss. In order to make a definitive diagnosis, though, the presence of inflammatory cells infiltration must be evident on histopathologic analysis. The therapeutic approach has 2 main goals: decrease the inflammatory response and remove possible antigenic sources, such as food components or intestinal microflora. Despite advances in medical treatment, a large number of patients with inflammatory bowel disease (IBD) require surgery. Elective abdominal surgery for inflammatory bowel disease is common. Surgery for Crohn's disease is not curative, and treatment must be individualized to the disease process. Surgery for ulcerative colitis generally is curative. Timely and accurate diagnosis of IBD can greatly reduce the percentage of surgical operations**.**
40 IBD patients was examined -17 Crohn's disease and 23 ulcerative colitis. Diagnostic measurements of patients without no pathology in the right hip cavity were analyzed as a control group. Each patient with colorectal pathology underwent a qualitative irrigographic examination. The iliocecal angle was measured on radiography
Crohn's disease was diagnosed when the iliocecal angle was sharp (15º-60º), then non-specific ulcerative colitis was found when it was blunt (90º-130º) The iliocecal angle was first measured by us.
There is a correlation between inflammatory diseases of the intestine and the iliocecal angle. It is recommended to use this auxiliary radiological method for the timely and accurate diagnosis of inflammatory bowel diseases.

Keywords: Crohn disease; ulcerative colit; Ileocecal angle; Inflammatory bowel disease.

FACTORS INFLUENCING WOMEN'S CONTRACEPTION ACCEPTABILITY IN A MOROCCAN URBAN AREA

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Abstract

Objective: Despite the very high efficacy of intrauterine contraceptive device (IUD) as a long-term contraceptive method, in Morocco, the prevalence of (IUD) utilization represents only 4.6% (4.2% in 2011) with significant differences between regions, ranging from the use of almost 6% to less than 2% (1.9%). This study aims to determine the (IUD) acceptability, its causes, and related factors among women attending health centers in Morocco. Methods: A descriptive study was conducted in primary health care centers in Settat city involving 120 women aged between 15-49 years, the data were obtained about the knowledge, the perception, and acceptability towards IUD. Results: Almost all the women surveyed adopt the pill to plan their pregnancies (95.8%), while 42.5% are dissatisfied with the use of the method adopted and 38.3% expressed a preference for the IUD. The factors for not using the IUD are medical, psychological, and social, with the husband's refusal of this method being among the most common of all, after fear of adverse effects related to the IUD (32, 5% versus 39.2%), the pejorative name of IUD (*Amalia Sghira*) or "minor surgery" contributing to a negative perception of the IUD, false rumors about this contraceptive method were demonstrated in 47.5% of our sample, 83.33% of whom thought that it causes an inconvenience during intercourse. Logistic regression was used to identify the independent variables for IUD acceptability: having the husband's consent to use the IUD (P-value<0.05), and the husband's age being less than 40 years(P-value<0.05), were positive and significant predictors of the probability of IUD acceptability.

Keywords: contraception, acceptability, IUD, factors.

EVALUATION OF SARS-COV-2 ANTI-S IGG LEVELS IN BULGARIAN INDIVIDUALS

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Abstract

It is believed that the presence of virus-neutralizing antibodies that target the spike protein of SARS-CoV-2 has a protective effect against Covid-19. The aim of the present study is to quantify the levels of anti-spike-SARS-CoV-2 antibodies from class IgG (SARS-CoV-2-anti-S IgG). A total of 337 individuals are included in the research (men 120; 35.60% and women 217; 64.39%) at average age 49.02±15.6 years old (men- 48.1±17.05 and women 49.53±14.85 years old). The study is retrospective and comprises all the patients tested for one month (September 2021) voluntarily for antibodies at the Department of Clinical laboratory of UH St. Ivan Rilski, Sofia. The antibodies are measured by the analytical platform Alinity, Abbott Laboratories; SARS-CoV-2 IgG II Quant. The results presented as mean values ± SD are: in the total group – 3703.83 ±9882.00 AU/mL (525.93±1403.24 BAU/mL); men – 4955.78±13515.87 AU/mL (703.72±1919.25 BAU/mL); women – 3011.50±7065.60 AU/mL (427.63±1003.31 BAU/mL). Below the cut off value of the method (<50 AU/mL; 7.1 BAU/mL), negatives remain as follows: total – n=63 (18.69%); men, n=18 (15.00%); women, n=45 (20.73%). Below the potentially protective value of 150 BAU/mL, the distribution of the results is: total – n= 110 (32.64%); men, n=44 (36.66%); women, n=66 (30.41%). The results below the lower value of the reported interval (6.8 – 80 000.00 AU/mL) are the following: total – n=46 (13.65%); men, n=12 (10.00%); women, n=34 (15.66%). Values above 80 000.00 AU/mL are measured in only two patients (men). It might be concluded that less than 20 % of people have not been infected with SARS-CoV-2 and also that less than 40% are with low levels of humoral immunity - below 150 BAU/mL.

Keywords: Covid-19, SARS-CoV-2-anti-S IgG, spike-protein, BAU

CLAYS APPLICATIONS IN PHARMACY AND MEDICINE

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Abstract

Clay is linked to life. It has always been part of everyday life. Potential source of life, shelter, tool, therapy, clay is a cheap and rich resource. In the pharmacy, the patient is at the centre of the practitioner's approach. The interventions with clay may be what he is looking for and what he needs. Support, advice and monitoring being the heart of the pharmacy profession, only trained professionals are allowed to offer the patient this treatment, which can be optimal for him, creating a link and therefore trust with the professional of health. Its mineral wealth and trace elements make it a tool in health, well-being, beauty, maintenance of the body, generally in the cosmetics and pharmaceutics industry. Those elements not exceeding one micron, can be used with the benefit of a form of oligo-metallotherapy which confers some of their properties to the clay.
Clay does not only have beauty and well-being virtues in health. Above all, it represents an alternative to conventional therapies in the different fields, such as: care of wounds, whether digestive or cutaneous, healing, painful pain, inflammation, strengthening of the body, bone system, growth, cell renewal. Its many properties interact with the body at many levels.
Finally, it could become a high added value to the galenic solutions of tomorrow. In effect, a vector of "green" drugs that would make the scientists and researchers forget the many toxicities induced by current active ingredient carriers. The clay "nanotubes" could thus transport the active molecule to target cells without altering the integrity of healthy tissue cells. This can represent the therapies of tomorrow, without dangers.

Keywords: Pharmacy, Clay, Nanotube, Natural therapy

TECHNICS AND METHODS FOR BODILY AWARENESS IN CHOIR TRAINING

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Abstract

Choir is a music community formed by human voices. Therefore the main material of choir and choir training is human voice. Human voice is formed by collaborative functioning of most organs such as vocal cords, lungs, diaphragm and larynx. However, when singing, not only the voice production-diffusion organs but also the whole anatomy works. Thus it is necessary to know and be aware of the impact of organs working in a collaboration first and then all elements of the anatomy on voice quality. For example; physical reasons such as a rise in the shoulders, tightness of a muscle on the back, jaw spasm and tongue going backwards may affect the voice quality and lead to an unsuccessful voice production. Mental reasons forming a basis for some of these physical effects and cognitive reasons like performance anxiety also play a determinant role in voice quality. Therefore it is necessary to imagine and design the whole body, spirit and mind as parts of an instrument. Bodily awareness is crucial in both voice and choir training and in instrument training. However, examining the literature we see that studies on bodily awareness are quantitatively inadequate. In addition, our country needs new studies and perspectives on choir training. The purpose of the study was to draw attention to the place and importance of bodily awareness in choir training and give information about a variety of technics and methods created by different experts in this field. The descriptive study was based on the data acquired via the document screening method. The study reviewed the relevant literature for technics and methods such as Dalcroze, Alexander, Feldenkrais, Laban, Lessac, Linklater and Langer Rühl and presented the data acquired. We believe that the study will be a reference for further studies to be conducted in this field and contribute to the choir literature.

Keywords: Choir training, bodily awareness, technic, method

KORO EĞİTİMİNDE BEDENSEL FARKINDALIĞA YÖNELİK TEKNİK ve METOTLAR

Özet

Koro, insan seslerinin oluşturduğu bir müzik topluluğudur. Bu nedenle koro ve eğitiminin ana materyali insan sesidir. İnsan sesi; ses telleri, akciğer, diyafram, larenks vb. gibi birçok uzvun işbirliği içinde çalışmasıyla oluşmaktadır. Ancak şarkı söylerken yalnızca ses üretme-yayma organları değil, bütün anatomi işin içindedir. Bu nedenle öncelikle işbirliği halinde çalışan organların, sonra da anatomiye ait diğer bütün unsurların ses kalitesine ne gibi bir etkide bulunduğunun bilinmesi ve farkındalığında olunması gerekmektedir. Örneğin; omuzlardaki bir yükselme, sırttaki bir kasın sıkışması, çenenin kasılması, dilin geriye gitmesi gibi fiziksel nedenler, ses kalitesini etkileyerek başarısız bir ses üretimine neden olabilir. Ayrıca bu fiziksel etkilerin bazılarına temel oluşturan ruhsal nedenler ve performans kaygısı gibi zihinsel nedenler de ses kalitesinde belirleyici rol oynamaktadır. Dolayısıyla bütün vücudu,

ruhu ve zihni, bir çalgının parçaları olarak düşünmek ve tasarlamak gerekmektedir. Bedensel farkındalık, gerek ses ve koro eğitiminde gerekse de çalgı eğitiminde büyük önem arz etmektedir. Ancak alan yazın incelendiğinde bedensel farkındalıkla ilgili yapılan araştırmaların, nicel olarak yetersiz olduğu görülmektedir. Bunun yanı sıra, ülkemizde koro eğitimi ile ilgili yapılacak yeni araştırmalara ve bakış açılarına da ihtiyaç duyulmaktadır. Araştırmanın amacı, bedensel farkındalığın koro eğitimindeki yeri ve önemine dikkat çekerek bu alanda farklı uzmanların oluşturduğu çeşitli teknik ve metotlar hakkında bilgi vermektir. Araştırma betimsel nitelikte olup; doküman taraması yöntemiyle elde edilen verilere dayanmaktadır. Araştırmada Dalcroze, Alexander, Feldenkrais, Laban, Lessac, Linklater, Langer Rühl gibi teknik ve metotlar hakkında ilgili literatür taranarak, elde edilen veriler sunulmuştur. Araştırmanın bu alanda yapılacak diğer araştırmalara kaynak olacağı ve koro literatürüne katkı sağlayacağı düşünülmektedir.

Anahtar kelimeler: Koro eğitimi, bedensel farkındalık, teknik, metot.

THE PLACE AND IMPORTANCE OF EFFECTIVE LEADERSHIP IN OVERCOMING ECONOMIC BACKWARDNESS

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Abstract

There are different classifications when looking at the development dimensions of countries. In the generally accepted classification, there is a distinction between developed, developing and undeveloped countries. In fact, there are definitions such as poor-rich countries, unindustrialized-industrialized countries, underdeveloped-advanced countries. By looking at the reports of organizations such as UNCTAD, UNIDO, IFC, IDA, IMF, ILO and OECD, clear explanations can be made on this subject. When the developed country is mentioned, undoubtedly structures with appropriate plans, programs and applications come to mind. Developed countries are the countries where the opposite is seen. Of course, backwardness or poverty should not be the fate of societies. Definitely of developed countries must share their economic and human development. Of course, there are problems arising from the macro structure and globalization. However, the peoples and governments of underdeveloped countries also need to do the right things. Different suggestions can be developed to overcome the economic backwardness. There are also those who group them separately in macro and micro structure. In this study focuses on the role that falls to the leadership function in overcoming economic backwardness. The leadership function is hide in the interaction between “the leader herself/himself, her/his followers, goals, environment or conditions”. In underdeveloped countries, an effective leadership function is needed. In this study, subject of economic backwardness, leadership function and effective leadership in overcoming economic backwardness are included. The study is concluded with conclusions and recommendations.

Keywords: Economic Backwardness, Leader, Leadership Function, Effective Leadership in Overcoming Economic Backwardness

INTRODUCTION

When the economic backwardness is examined closely, the existence of many factors can be revealed. Criteria such as structural problems, low income, economic and social backwardness, lack of technology, industrialization problems, failure to establish education and health infrastructure, energy bottleneck, financial inadequacies, obstacles to entrepreneurship, lack of trained manpower and lack of diversity in the economy are among the basic criteria of immaturity. Issues such as the country's economic size, ease of access to capital, the place of agriculture and industry in production and employment, per capita national income, foreign trade capacity and export power, and the current account balance sheet can be handled separately. As a result, some countries have developed economically. Some are states in between trying to thrive. These are the ones who take developed countries as role models for themselves. Developing countries are struggling to be promoted to a higher league. Unfortunately, some of them are economically backward.

There are studies in macro and micro dimensions for the cause and solution of economic backwardness. Here, focuses on the role that falls to the leadership function. In other words, comprehensive economic models were excluded. In the leadership function, “leader, followers, goals, environment or conditions” are important. There are quite different types of leaders available in application. According to group size, there are personal and executive leadership styles. According to their status, positive and negative distinctions were made. According to understanding and behavior, democratic, autocratic, liberal, humanist, supportive, charismatic, natural, transactional and transformational types can be seen. In recent times, servant, ethical, crisis, quantum, institutional, authentic, symbiotic, toxic and visionary leaderships are listed. The important thing here is to display the appropriate style. Effective leadership is the art of influencing people's behavior. It has "merit" at its core. It is the capacity and willingness to lead people towards a common goal. A leader is a person who presents common thoughts and desires as an acceptable goal and activates the potential forces of her/his people around this goal.

This study is about the place and importance of effective leadership in overcoming economic backwardness. First, economic backwardness is discussed. Here, development and underdevelopment are explained separately. Then the leadership function is introduced. Here, leadership, its function and types are given. In the third title, the place and importance of effective leadership in overcoming economic backwardness is discussed. As a result of the study, various suggestions have been developed especially for the governments of economically backward countries.

1. ECONOMIC BACKWARDNESS

There are various studies at the level of grouping of countries. When we look at the development dimensions of societies, we come across different classifications. In the generally accepted classification, there is a distinction between developed, developing and undeveloped countries. In fact, there are rankings such as poor-rich, non-industrialized-industrialized, underdeveloped-advanced countries. There are also those who list some of the underdeveloped countries as least developed countries. When describing economic backwardness, some concepts with similar or opposite meanings need to be explained. In order to better understand the subject, one can start with the concepts of backwardness and its opposite. In other words, the reasons for backwardness can be seen from the applications of the developed ones. There are various indicators of a country's development or development. By looking at the reports of organizations such as UNCTAD, UNIDO, IFC, IDA, IMF, ILO and OECD, clear explanations can be made on this subject.

Developed countries are those where there is a lot of industrial activity and people generally have high incomes. In such societies, there is a high level of industrialization. Economic development has been completed. Production is carried out with advanced technology. High shares are given to research and development (R&D). The standard of living and per capita incomes are high. Most of them have very high human life indexes. There are developing countries in between. These are the ones who take developed countries as role models for themselves. They are trying to reach a higher league. Some data and applications to developed countries; some are similar to underdeveloped countries. They typically fund most of their research with public funds and may face stronger budgetary austerity policies. There are opportunities to attract foreign capital like the developed ones. However, due to some structural problems, this is not at the desired rate. They have to overcome many problems such as the middle income trap (UN, 2014: 1-8; Arias and Wen, 2015:1;Gonzalez-Brambila, et al., 2016: 1-2).

Countries who remain except for developed and developing countries, they belong to the group of underdeveloped countries. These have not progressed as much as the countries in the first two ranks. First of all, they are countries with structural problems. Their economic and social structures are not yet developed. Industrialization and economic industrial production are at lower levels. Their export power is not enough. Their human and physical capital is insufficient. Today, R&D has no borders and both the creation and dissemination of knowledge is becoming more and more global. However, it is almost impossible to find R&D funds for underdeveloped countries. Vocational and technical education is not institutionalized. There is not enough qualified workforce. Human life indexes are quite low. Political instability is high. Corruption does not end. There are persistent social and economic inequalities. Income per capita is within the limits of hunger and/or poverty. Health infrastructure has not been established. Housing and food-drink are insufficient. Energy is scarce. Urbanization and environmental problems are being drawn. Disease and death rates are high. They are in this situation as they have never been able to overcome the obstacles to growth and development. It is difficult for them to survive without foreign aid. Many organizations, especially the United Nations, declare various sustainable development goals for them (UN, 2014: 1-8; Gonzalez-Brambila, et al., 2016: 12-13; OECD, 2020: 1).

2. LEADERSHIP FUNCTION

Here, first, the concept of leadership and its scope are explained. Then, the main leadership type or types encountered in application are summarized. It is possible to come across a wide variety of definitions about the definition and formation of leadership. Leadership, which has been defined by sociologists since the 1900s, is generally; It can be explained around three important features: "The title given to the person, the characteristics of the person and the behavior structure of the individual who is the leader in the group" (Luthans, 2010: 268-269; Simsek and Celik, 2021: 62). According to some authors; Leadership is first and foremost an art.

It is the art of grouping, coordinating and motivating individuals to achieve the goals of the organization. Leadership is described in the social science literature as follows: “1. Adjective gained from a situation (describing a cadre); 2. Characteristic of a person (qualifies a person); 3. A behavior class (qualifies a behavior category)”. Leadership; It is "The art of influencing the behavior and actions of others in order to achieve the goal under certain situations and conditions" or "The whole of mutual relations between the leader, who has the power to make others do something by getting others to adopt it, and the followers that occurs in certain situations and expressed in the form of interaction". According to these definitions, the leadership function can be expressed as follows (Katz and Kahn, 1977: 334; Kocel, 2018: 590-592; Eren, 2017: 435-436; Simsek et al., 2018: 198): Leadership = f (Leader + Followers + Conditions + ∞ Objectives).

In application, it is possible to encounter different types of leaders such as (Greenlaf, 1977; Luthans and Aolio, 2002: 243; Kesken and Ayyildiz, 2008: 741-742; Porter-O’Grady and Malloc, 2010; Goldman, 2011: 151-242; Gupta, 2014: 80-83; Kocel, 2018: 608-611; Simsek and Celik, 2021: 63-65):

1. Leaders by group size: Personal and executive leadership styles can be exhibited.

2. Leaders by status: They are positive and negative types.

3. According to their understanding and behavior, leaders are: Democratic, autocratic, liberal, humanist, supportive, charismatic, natural, transactional and transformational. Explaining some of them is important for our subject: “-Humanist Leader: Demonstrates paternalistic

behavior. He is in a protective role. From time to time, he takes the opinion of those in the middle step. It mainly uses the reward system. Motivates with emotional guidance. It does not go to punishment unless it is necessary. -Supportive Leader: It is a type of leader who does not take decisions completely with the group, but takes into account their opinions and suggestions. Applies participation and reward systems. It is open to bottom-up and top-down information flow. -Charismatic Leader: She/He is the leader who drags the group members after her/him and has a fascinating structure. Therefore, its efficiency is high. He/She makes the decisions himself/herself and every word is accepted as an order. Although she/he is distant from her/his followers, her/his orders are easily followed. Charismatic leaders have a vision, have developed skills to convey it to their followers, have an idea of their own strengths, and are extremely consistent in acting in line with their vision. -Transactional Leader: They are business oriented. They associate the past with the present. There are styles of management type with exceptions, contingent rewarding, actively or passively. -Transformational Leader: They make an effort to direct and guidance them to a vision by clearly defining the roles and duties they expect from their subordinates. These types try to increase their self-confidence by focusing on the talents and skills of their stakeholders and thus to achieve performance above expectations. In this way, subordinates better understand the importance of their duties and focus on organizational interests rather than individuality. Among the main management styles implemented by such leaders, displaying charisma, influence by idealizing, inspiring, intellectual stimulation and individual attention are important".

4. New leadership types: These include servant, ethical, crisis, quantum, institutional, authentic, symbiotic, toxic and visionary leadership types. Although all of them are important for our subject, it was preferred to explain the last five: "-Institutional Leadership: These are the types who aim for regular and stable corporate relations, defend legitimacy, and struggle with uncertainty and instability. It is important for them to follow effective communication methods, to establish transparency, fair and reliable rules, to institutionalize leadership and education, and to be open to internal and external audit. -Authentic Leadership: It is a leader who has the potential to strengthen positive psychological capital, is basically based on openness / accuracy and can express herself/himself as she/he is without relying on traditional role and status privileges. In other words, it is a type of leadership that arises from the individual's positive psychological capacity and institutional environments that provide rich experiences, includes self-awareness and self-control, and thus supports positive development. Here, the principles of transparency, internalized morality, balanced evaluation of information and individual awareness are complied with. -Symbiotic Leadership: It is a type of leadership that can manage dissimilarities, carry differences into a team spirit, share scarce resources fairly, develop sustainable relationships, establish mutual trust, and is based on the philosophy of no loser. -Toxic Leadership: In the nature of this leadership, there is a personality that harms the subordinates and the organization with negative attitudes and poisons the environment. According to this concept, we are faced with; There is a partially narcissistic and visionless type of leader who puts his individual interests above everything else, avoids open communication, prevents development by preserving the status quo, is closed to criticism, does not establish trust, spreads fear, causes crisis and stres. -Visionary Leadership: It is a leadership style that sets out to manage the future, targets opportunities and advantages, eliminates threats and weaknesses, is aware of problem-solving techniques, can make self-sacrifice, builds an effective team, displays charisma, shares its vision, and improves the quality of life of its stakeholders".

3. EFFECTIVE LEADERSHIP IN OVERCOMING ECONOMIC BACKWARDNESS

When looking at the causes of economic backwardness, many functional problems can be seen. There are many appropriate criteria used together to characterize completely different developed countries in terms of level of development, economic and social structure and potential development opportunities. Why are some countries developed while others are underdeveloped? Why have some societies remained poor? Is immaturity a destiny? Of course, various answers can be given to these questions. First of all, there are problems in plans and programs in underdeveloped countries. The economic and social structure is not developed. Industrialization periods were missed. The agricultural sector has not been modernized. General employment is problematic. The trained specialist workforce is in low numbers. Exports are no enough. It is doubtful that necessary analyzes have been made at the national and global level in these countries. Whereas analyzing the global economy is essential. Alongside growth and structural change, it also needs to be looked at through the lens of global assessment (Karaca and Sahin, 2010: 16-17; Spence, 2019: v).

Some theorists recommend that underdeveloped countries take developed countries as role models. But is this as easy as it is spoken? Are underdeveloped countries not developed only economically? Are there not other factors other than the absence or inadequacy of the economic system? When the subject is examined closely; Inability to follow technological developments, obstacles arising from social and cultural structure, inadequacy of legal and political structure, scarcity of natural resources and some international restrictive factors can be encountered. An effective leader should be able to analyze on a world scale. It should interpret the gap between its own country and developed countries well. The difference in the level of development between developed countries and underdeveloped countries is getting wider with each passing period. Although there is no consensus on which criteria to use in measuring this difference, strategic analysis is expected from the leader. The data obtained from macro and micro structure should be evaluated effectively. It should develop policies that will ensure the efficient flow of data. Laws and regulations in this direction should be implemented quickly. It is important for every developing society to establish an integrated national data system. There is a need for a secure data flow between all stakeholders (Karaca and Sahin, 2010: 20; Worldbank, 2021: 23-41). Effective leadership can come into play here. Cooperation between public organizations, academic circles, business world, financial institutions, media, non-governmental organizations and individuals should be ensured. Successful leaders are those who create an effective and reliable collaborative environment.

Every leader who wants to make his society economically and socially prosperous is an important person. Leaders have to deal closely with the internal and external environment. Global pressures should be reduced as much as possible. It may be necessary to establish open communication with international aid institutions or organizations. Sustainable policies should be addressed. Leadership and entrepreneurship activities of developed countries should be adequately analyzed. A society that is cynical, hopeless and closed to innovation needs to be instilled with a vision. It should not be forgotten that entrepreneurship is one of the basic development dynamics of societies. Things that hinder development and development should be analyzed well. Here, the following comment for European countries in general and Spain in particular is significant; “As of today, many European countries are at the level of development. However, in the historical process, all did not go well. When their history is investigated, many factors can be seen that hinder their economic development. The periods when the understanding of the Inquisition was active is one of the typical examples. The Spanish Inquisition, in particular, can be studied closely. This understanding limited group dynamics and social enrichment. Confidence quotient had dropped. Human capital was overlooked. Hence, free enterprise was also adversely affected. In a place where there were no innovative and developing ideas, there could be no talk of development” (Drelichman et al., 2021: 1).

While leaders demonstrate visionary leadership in economic development, they must also pay attention to other issues. They should aim at institutionalization. They should implement sustainable policies. A leader who aims for regular and determined corporate relations, defends legitimacy, and struggles with uncertainty and instability has a greater chance of success. It is necessary to establish fair and reliable rules, institutionalize leadership and education, and be open to internal and external audit. Undoubtedly, positivity is also important in all activities. Democratic, liberal, humanistic and supportive attitudes are needed. In the transformational leadership, it is important to instill trust in the members of the society. Displaying charisma, influence by idealizing, inspiring, intellectual stimulation and individual interests should all be used together on the path to economic development. Leaders should be based on openness and honesty while preparing their people for the future. There is no need for traditional role and status privileges in the path of country development. It should be simple and understandable. Here, the principles of transparency, internalized morality, balanced evaluation of information and individual awareness should be shared. Some countries may consist of different cultures and environments. The leaders of the countries in this situation should aim for a structure that carries the differences to a team spirit, can share scarce resources fairly, develops sustainable relations, establishes mutual trust and everyone wins. In other words, if one believes that no one will lose, these individuals and therefore the society can be clamped in line with the goals.

CONCLUSION AND RECOMMENDATIONS

There are various studies on the level of development or development of countries and societies. In general, those who make three basic classifications are in the majority. In other words, the distinction between developed, developing and undeveloped countries is more preferred. This study first focused on economically backward states or nations. Subsequently, the place and importance of effective leadership in overcoming this backwardness was tried to be revealed. Every leader who struggles for the development of his country must first have technical knowledge and intellectual ability as a person. It is also important to convince the audience in line with the new vision. "A leadership behavior that adequately designs the future, can share this vision, aims for opportunities and advantages for its society, can eliminate threats and weaknesses against its country, is aware of problem-solving techniques, can make sufficient sacrifices, forms effective teams in institutions, and whose main purpose is to increase the quality of life of its stakeholders" it is like a bright lantern that lights the way. The question may arise here? So how does a leader achieve these? The following points can be shared in response to these and similar questions. The views listed here, the questions developed and possible answers; It also contains several recommendations for the relevant circles:

-Every leader who aims to overcome economic backwardness should give sufficient importance to institutionalization, sustainability and teamwork.

-Leaders and followers should adequately analyze their own economic and social structures together with the global world. Societies that cannot solve their structural problems; It is not easy for them to overcome political, social and economic problems. These should be well understood. Strong policies and remedial solutions are needed.

-The contribution of entrepreneurs to the development of the country cannot be ignored. Barriers in the field of entrepreneurial ecosystems must be removed. Efficiency and profitability increases can be achieved when production and marketing are carried out in areas with high added value. It is easy to write expectations in reports. However, there are several difficulties in application. Those who want to take a serious distance in this direction should

seek answers to the following questions; “Are there growth models? To what extent does the legal structure encourage development? What is the level of capital and technology? What technology is used to produce goods and services? What is the course of global and regional trade? What dimension of digitalization is experienced? Are aspects such as mobile internet activity, platform-centered open ecosystems, mobile payment systems adequately adapted? Can new channels, opportunities and accessible markets be provided for businesses?”.

-International cooperation opportunities should be increased for the reduction of barriers to international trade and investment, the digitalization of production and export opportunities. In order for global capital to flow into the country, strategic collaborations with international companies can be sought. Necessary improvements can be made to attract direct capital investment. While cooperating, national interest and country independence should be protected. For the development of underdeveloped countries, the following institutions or organizations have very important duties: “United Nations-Development Policyand Analysis Division (UN-DPAD), United Nations-Department of Economic and Social Affairs (DESA), United Nations-Economic and Social Council (ECOSOC), United Nations-Conference on Trade and Development (UNCTAD), International Monetary Fund (IMF), World Bank (WB), Organization for Economic Cooperation and Development (OECD)”.

In addition, green transformation, which is sensitive to ecological structure and includes social responsibility, should not be neglected. Evaluation of the literature on economic backwardness and leadership function has been the limitation of this study. In order to overcome this, field studies can be carried out. Thus, statistical data obtained with effective leadership in overcoming economic backwardness can be reached. Some success stories in this direction can be considered as a case study.

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MOTIVATIONAL APPLICATIONS THAT STAND OUT IN ORGANIZATIONS IN THE COVID-19 PANDEMIC

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Abstract

A lot has changed since the first cases encounter in Wuhan, China's Hubei province and then has been reported by the World Health Organization (WHO) China Country Office. This disease, which was called 2019-nCoV in the early periods, was named as Covid-19 in the later periods. Due to the global impact of the epidemic, WHO had to declare a pandemic. In the following periods, Alpha, Beta, Delta, Gamma, Omicron corona virus types came to the fore. The world has made efforts to reduce the damage and suppress the disease. Measures and applications in the macro structure were also closely followed by the management of the organization. One of them was motivational practices in organizations. Motivation; It is about the phenomenon of stimulating, directing and reinforcing human behavior. People can act in various ways with different motives. The extent to which these behaviors are successful can be determined by looking at the degree to which the individual's rewards satisfy their needs. In addition to satisfying the individual's needs, the reward has another important function, such as providing information about whether the behavior is appropriate and whether it will be desired in the future. Motivational applications that stand out in organizations in the Covid-19 pandemic are important in this respect. In this study, firstly, the Covid-19 Pandemic and motivation issues in organizations are explained. Then, the motivational applications that stand out in the Covid-19 period were emphasized. The study is concluded with conclusions and recommendations.

Keywords: Covid-19 Pandemic, Motivation, Motivation in Organizations, Motivational Applications That Stand Out in the Covid-19 Period

INTRODUCTION

The first outbreak information within the scope of Covid-19 was encountered on 1 December 2019 in Wuhan city of China's Hubei province. On 31 December 2019, the WHO China Country Office reported cases of pneumonia of unknown etiology from the city of Wuhan, Hubei province. Originally named 2019-nCoV, this disease was later named Covid-19. The WHO first classified this outbreak as an "international public health emergency". As a result of the virus starting to affect the whole world, it was declared a global epidemic (pandemic). Later, Alpha, Beta, Delta, Gamma and Omicron strains were also introduced as coronavirus variants. Sensitive countries on this issue have tried from the beginning to reduce the incidence rate and end the epidemic. However, severe illness, high rates of intensive care units and deaths could not be completely eliminated. In the following periods, Covid-19 and its new variants have changed many things. While some applications have temporary features,

some have reached dimensions that will leave permanent effects. Another remarkable point in the organizational dimension has been the changes in motivation applications.

Motivation is a phenomenon that tries to answer the question of how and why people behave the way they do. There are driving forces behind the behavior of people in their daily activities. There are also the concepts of motive, impulse, desire or need. Certain behaviors or modes of action may be encountered in order to meet the needs. Various approaches have been put forward towards this in the dimension of "traditional, human relations, human resources and contemporary". The traditional approach has been able to see employees as "economic assets". In the human relations approach, social elements such as job attractiveness and group solidarity are emphasized in encouraging employees to work. The human resources approach approached the employee in terms of individual integrity. Contemporary approaches, on the other hand, focus on the analysis of needs in human behavior, the identification of thought processes that affect behavior, and the motivation to teach desired employee behaviors by repetition. During the Covid-19 pandemic period, some of these applications have become meaningless, albeit temporarily, and some have taken on different forms of application.

This study has been prepared toward motivational applications that stand out in organizations during the Covid-19 pandemic. The study includes three separate titles. First, the Covid-19 Pandemic was explained. Secondly, motivation and motivation in organizations are covered. In the last title, the motivational applications that stand out in the Covid-19 Period were emphasized. The study was concluded with the conclusions and recommendations to the parties.

1. COVID-19 PANDEMIC

Coronaviruses (CoV) are a large family of viruses that can cause self-limiting from mild infections charts, common in the community such as the common cold, to more serious infections charts such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). There are various subtypes of corona viruses (HCoV-229E, HCoV-OC43, HCoV-NL63 and HKU1-CoV) that are found in humans and can easily be transmitted from person to person. These subtypes that circulate among humans are mostly viruses that cause the common cold. The WHO China Country Office reported cases of pneumonia originating from Wuhan (Hubei) on 31 December 2019. On 7 January 2020, the agent was identified as a new coronavirus (2019- nCoV) that has not been detected in humans before. Later, the name of the 2019-nCoV disease was accepted as COVID-19, and the virus was named SARS CoV-2 due to its close resemblance to SARS CoV. The World Health Organization classified the COVID-19 epidemic as an "international public health emergency" on 30 January 2020, and a global epidemic (pandemic) on March 11 due to the occurrence of COVID-19 cases in 113 countries, the spread and severity of the virus, except for China, where the first epidemic started has defined as (T.C. Saglik Bakanligi, 2020: 5).

The coronavirus disease has the power to seriously affect the people it infects. In particular, those with underlying medical conditions such as cardiovascular disease, diabetes, chronic respiratory disease or cancer are originally most affected. In the following periods, its sphere of influence has further developed. Anyone can get sick with Covid-19 and become seriously ill or die at any age. Various ways of preventing and slowing transmission have been proposed. Wearing a mask, maintaining social distance, paying attention to hygiene and getting vaccinated are among the Measures. The virus can be spread in the form of small liquid particles when coughing, sneezing, talking, singing or breathing from the mouth or nose of an infected person. These particles range from larger respiratory droplets to smaller

aerosols. For example, it's important to practice respiratory etiquette by coughing into a bent elbow, and if you're feeling unwell, it's important to stay home and isolate until you recover. WHO collects the latest international multilingual scientific findings and information on Covid-19. The global literature cited in the database is updated daily by searching bibliographic databases, manually searching and adding other scientific articles guided by experts (WHO, 2022: 1).

2. MOTIVATION IN ORGANIZATIONS

First here, motivation and motivation in organizations are defined. Afterwards, motivation incentive tools and theoretical basis of motivation are included. The word motivation comes from the Latin words "movere" and "stimulate". In other words, it means "to act" and "to warn". Motivation is an energy that governs and determines human behavior. In this sense, two important features of motivation can be highlighted. First; It is an energy force that directs individuals to behave in certain directions. The other is its effect on goal orientation. It is generally accepted that motivation means influencing the behavior of the individual and leading her/him to certain actions in line with this effect. The term motivation actually means exposing the individual to some influences and making her/him to act in a different way than she/he would have shown before these effects. As it is understood from the definitions made, “needs or expectations, behavior, goals and feedback” are important. Here, the continuation of the action, that is, the continuity in human behavior, is aimed. The most important task of the manager is to create an effective organization. An effective organization can be achieved with highly motivated employees. Unless each employee in the enterprise is willing to make an effort to fulfill the task assigned to her/him, managerial activities cannot yield results. People must be willing to perform effectively the tasks assigned to them. The role of motivation should be to create, develop and maintain that desire. In this sense, stimulation by needs and incentives; A motivational process that consists of exhibiting attitudes and behaviors and ultimately achieving satisfaction and productivity comes to the fore (Steers et al., 2004: 379-380; Simsek et al., 2019: 173).

Although it is accepted that there are presence of some universal-quality incentive tools about motivation, it is very difficult to develop a motivation model that is suitable for every person, every society and every business. On the other hand, incentive motivational tools, which are accepted to be valid and determined by many studies, but whose order of importance has changed, can be divided amongst themselves into three classes as economic, psycho-social and organizational tools. The following can be listed within the scope of economic instruments: "High income obtain, wage increase accepted by employees or unions, implementation of premium wage system, participation in profit, reward systems". The main psycho-social tools are; Being able to work independently, having personal power and authority, attaining social status, respect for personality and private life, an interesting, worthwhile and socially beneficial job, job security and psychological security, taking into account the suggestions of the employees, social pursuits, social participation and the environment adapt". Organizational and managerial tools can be: “Unity of purpose, workforce planning, equivalence of authority and responsibility, commitment to work and participation in decisions, establishment of an effective communication system” (Eren, 2016: 367-506; Eren, 2017: 494-504; Sabuncuoglu and Vergiliel-Tuz, 2008: 147-169).

In the historical process, there have been people who have explained the assumptions or theoretical approaches of managers regarding motivation under different headings. Here, "traditional, human relations, human resources and contemporary" perspectives or approaches are preferred. Investigations on employee motivation first started with the studies of Frederick W. Taylor. The extreme importance given to the payments to be made to the employees and

the assumptions that the employees put their economic interests above all have led to the conclusion that the employees are thought and seen as "economic assets". The traditional approach has pioneered the development of incentive payment systems based on the quantitative and qualitative performance of employees. The Human Relations Approach gained momentum with Hawthorne research. As a result, employees were made the subject of study as "people" and the concept of "social person" came to the fore instead of "economic person". The human resources approach has surpassed the economic and social human models and reached the concept of human as "a person is a whole". Contemporary approaches have dealt with the analysis of needs, which form the basis of human behavior, in various dimensions. “Scope or content”, “process” and “reinforcement theories” can be listed among them (Simsek and Celik, 2021: 79-80).

3. MOTIVATIONAL APPLICATIONS THAT STAND OUT IN THE COVID-19 PERIOD

The importance of motivation as a management function has increased after the idea that there is a conflict between human needs and organizational needs in the organization has been accepted. In addition to the desires and goals that affect and direct the behavior of the individual; There are also environmental factors such as environmental conditions, personal impressions, social habits and attitudes. As the individual cannot satisfy her/his desires and needs, a state of internal imbalance may arise. The motives that determine the desires and needs of the individual are personal and they can change direction, lose or increase their power over time with the effect of social environment and culture. In addition to motives, incentive tools also affect the orientation of the individual's behavior. The desire to do business of the individual whose desires and needs are satisfied thanks to the incentive tools offered by the management will increase in this way. These tools, which help the individual to reach her/his goals, also enable her/him to adopt the goals of the organization and intensify her/his activities for this purpose. A rational motivation system should be based on the principles of psychology and social science (Eren, 2017: 494-504; Kocel, 2018: 733-739; Simsek et al., 2021: 78-79).

The pandemic has created various problems around the world. Governments, institutions and business have been deeply affected. Public health has been threatened. The economic and social structures of societies have begun to deteriorate. Especially in underdeveloped countries, life has become more difficult. Undoubtedly, the improvement movements of some institutions on the world scale have been witnessed. One of them was the International Labor Organization (ILO). The ILO has developed the following recommendations to reduce the impact of Covid-19 on businesses, workers and society (ILO, 2021: 1); “1. Stimulating the economy and employment (active fiscal policy, conciliatory monetary policy, credit and financial support to certain sectors, including the health sector; 2. Supporting businesses, employment and incomes (expand social protection for all, implement job retention measures, provide financial/tax and other conveniences for businesses); 3. Protecting workers in the workplace (strengthen health measures, adapt work regulations, promote remote work, prevent discrimination and exclusion, ensure access to health for all, expand access to paid leave); 4. Using social dialogue between government, workers and employers to find solutions (strengthening the capacity and resilience of employers' and workers' organizations, strengthening the capacity of governments, strengthening social dialogue, collective bargaining and labor relations institutions and processes)”.

The support provided by public institutions during the Covid-19 period can also be seen in macro and microstructure cooperation. In order to cope with the effects of the epidemic all over the world, policy makers have implemented various practices. While central banks took

steps to provide liquidity, on the other hand, measures were taken to support the households and companies most affected by the epidemic on the side of fiscal policies. In the fight against the epidemic, in addition to the existing supports, special calls were made within the scope of the "SME R&D Initial Support Programme". “Social and Humanities Focused Covid-19 and Society Call”, “Covid-19 Focused International Cooperations” and “Development Agencies Fight Against Covid-19 and Resilience Program” are also in question. Grants and loans, R&D supports and employment incentives provided to SMEs and technology-based start-ups affected by the pandemic are important (TCMB, 2021; T.C. Sanayi Bakanligi, 2021; KOSGEB, 2021).

During the pandemic process, businesses have turned to various motivational applications. Undoubtedly, these have exhibited applications in proportion to their structure and scale. Regardless, the pandemic period has required special applications. Various needs of organizational structures and themselves can be mentioned. However, in this study, the needs of the employees and the motivation achieved by meeting them are given priority. Needs differ for each employee and may change over time, depending on their particular circumstances. The “one size fits all” approach may not always work when it comes to motivation. The Covid-19 process is remarkable in this respect. The pandemic has had negative effects on employee motivation and employment (Sinkowski, 2021: 18).

The turnaround phase of the Covid-19 pandemic could be a good chance for organizations to forge more tailored responses to workplace challenges and expand the goodwill and friendships gained in previous phases. It should be noted that organizations that build social capital in the early stages of the pandemic will be in a better position than others as they transition into the workforce return phase. Many people found it beneficial that organizations that have the opportunity to work remotely give this right to their employees. It has been found positive that flexible work schedules are arranged in a way that takes care of work-life balance (Emmett et al., 2020: 1-8).

In the pandemic environment, the "Human Resources Office" of a university has turned to remarkable work. The institution has developed various recommendations to help maintain employee engagement and productivity. Among them, the following are noteworthy; “-Encourage participation in professional development topics through free resources such as webinars, books, digitally available articles and other publications, podcasts, large open online courses through the institution portal. -Creating discussions with the team around professional development materials. -Earning continuing education/professional development credits towards certifications. -Attending webinars and other online sessions. -Visiting the websites of relevant professional organizations. -Making remote working easier and more versatile with digitization. -Learning, using or updating a task management platform. -Talk to members about areas they currently want to grow or learn at work. -Provide employees with the opportunity to cross-train to better respond to future demands for organizational flexibility.” (Covid-19 Guidance, 2020: 1).

During the Covid-19 pandemic period, it was noteworthy that the factor of trust and transparency was prominent among the motivational applications that came to the fore in companies In the uncertainty caused by the pandemic, maintaining the sense of trust in the organization is a basic requirement. For this purpose, timely sharing of organizational developments with employees is a positive step. The protection of the health and safety of employees after the Covid-19 outbreak has also been a source of motivation. Not dismissing an employee was also welcomed. Developing employee-oriented strategies and giving importance to intellectual resources are among the useful activities (Sari-Gersil and Yuksel-Senturk, 2021: 134-135).

As a result of a research on the changes experienced by white-collar employees working

remotely and how these changes affect their working motivation, the following situation was emphasized; “The most important issue for employees during the Covid-19 pandemic period is to stay away from the virus and lead a healthy life. For this reason, working from home has increased their motivation as it creates a healthy environment. This is actually perceived by the employee in direct proportion to the importance that the workplace gives to its employees. Unfortunately, many workplaces continue to work in the workplace, putting the health of their employees on the second plan and causing them to be uneasy at the workplace. By giving their employees the chance to work from home, businesses both increased their motivation and increased their productivity. It should not be overlooked that prolonging this process may lead to lack of motivation in employees” (Akbas-Tuna and Turkmendag 2020: 3259).

CONCLUSION AND RECOMMENDATIONS

Covid-19 virus has affected the whole world closely. Since the WHO declared this situation a pandemic, Alpha, Beta, Delta, Gamma, Omicron species have also been introduced as coronavirus variants. States, public institutions, companies and all humanity have mobilized to end this epidemic. However, since a definitive solution has not been found yet, its impact on the relevant circles continues. Undoubtedly, states have turned to some remedial measures for their own citizens and all humanity. Examples of positive practices in this direction can be listed separately. However, in this study, more micro dimensions were targeted. In other words, motivational applications that stand out in organizations in the Covid-19 pandemic have been focused.

Motivation includes all the methods applied to align the goals of the employees with those of the organization. On the one hand, it aims to increase the efficiency of the enterprise, and on the other hand, to increase the satisfaction that the employees expect from the enterprise. There is a close relationship between job satisfaction and motivation. Generally, satisfaction arises because the wishes of individuals that they want to come true and the impressions they get from the business environment match. Comparing the reward that an individual expects from the job with the reward he/she receives also reveals job satisfaction. Motivational applications in the Covid-19 period are important in this respect. Undoubtedly, various suggestions can be developed within the scope of motivational applications that stand out in organizations in this period:

-It should be accepted that the pandemic can be a source of crisis in itself. Concerns that may arise in this context can be reduced by open communication and transparent practices.

-The human element should never be overlooked. It should be supported by tangible and intangible elements. In order to increase efficiency and effectiveness, the satisfaction of the employee with his/her job should be increased. This is achieved by motivating him/her to work. A motivated employee facilitates the achievement of organizational goals.

-People with health and future concerns can expect more attention and support than ever before. Contemporary motivational applications can be usefully applied. First of all, social organization, organic structure and group dynamics should be accepted in strategic human resources management. With the “scope” approach, the essence of the needs of the employees can be reached. Information on how these needs can be satisfied at work or at home can be compiled. With the “process” approach, the thought processes that affect the behavior of the personnel can be determined. What kind of rewards employees desire in their work or home environment can be prioritized. With the "reinforcement" approach, it can be emphasized that the employee behaviors desired by the organization are learned through repetition.

-In the pandemic period, intensive technology is more needed. Because the developments in

this field have removed the concepts of time and space. Various health problems that can be caused by face-to-face working can be overcome by virtual organization or virtual business. There are various options in this sense on digital platforms and social media. Interactive business meetings, virtual design, augmented reality, power wall, smart drone, etc. in question. However, while these developments are used to eliminate the problems of Covid-19, some issues should be considered. The heavy use of humanoid robots or artificial intelligence elements may raise concerns about unemployment among personnel. Open communication and participatory management can easily relieve concern and fears. Evaluation of the literature on the Covid-19 pandemic and motivation in organizations has been the limitation of this study. In order to overcome this, field studies can be carried out. Thus, the motivational applications that stand out in the Covid-19 period can be analyzed more comprehensively with the help of statistical data.

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HOLY PLACES IN KİLİS CITY CENTER AND ITS EVALUATION IN TERMS OF FAITH TOURISM

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Abstract

Faith tourism is important both for generating income and for publicizing sacred sites. Along with entertainment, recreation, sports, health, and cultural factors, faith is one of the reasons people participate in tourism. All societies participate in faith tourism to visit places considered sacred because of their faith and to find spiritual solace. In recent years, faith tourism has taken its place alongside other types of tourism and has become a global sector. Kilis, which hosts various civilizations and major monotheistic religions, is a place with rich cultural and religious tourism potential.

Although the reasons for which people travel based on their religious beliefs vary, religious travel has increased, especially in recent years. In particular, places of worship or shrines that offer spiritual relaxation are a pleasant getaway for recreation seekers and provide an opportunity to see how cultural, historical, and religious heritage influences contemporary life. People visit religious sites for reasons such as the desire to meet people who belong to their own religion, to perform their religious duties, to see important centers of their own religion, and to direct their wishes or desires to Allah.

The aim of this study is to determine the potential of the holy sites in the city of Kilis for faith tourism. The city of Kilis, which has been dominated by many civilizations throughout history, and many religious buildings belonging to these civilizations are among the places visited for recreational purposes. There are also some religious buildings that belong to Christianity and Judaism, especially Islam. The most numerous of these buildings are the mosques that were built during the Ottoman period. Qualitative and quantitative research methods were used in the study. The literature relevant to the study was researched, the findings obtained from the secondary data sources, the observations made in the field and the information and reports obtained from the relevant institutions were evaluated using the available data and the data obtained through the research were analyzed using the descriptive analysis method.

Keywords: Turkey, Faith Tourism, Holy Places.

KİLİS ŞEHİR MERKEZİNDE BULUNAN KUTSAL MEKANLAR VE İNANÇ TURİZMİ AÇISINDAN DEĞERLENDİRİLMESİ

Özet

İnanç turizmi hem gelir getirici hem de kutsal mekânların farkındalığını ortaya koyması yönünden önemlidir. Eğlenme, dinlenme, spor, sağlık, kültürel etkenlerin yanında inanç da insanların turizme katılma nedenleri arasındadır. Tüm toplumlar, inançları gereği kutsal sayılan yerleri ziyaret etmek ve manevi rahatlık sağlamak için, inanç turizmine katılmaktadır. Son yıllarda inanç turizmi diğer turizm türleri içindeki yerini almış ve küresel bir sektör haline gelmiştir. Farklı medeniyetlere ve büyük semavi dinlere ev sahipliği yapan Kilis, kültür ve inanç turizmi potansiyeli zengin olan bir yerleşmedir.

Kişilerin dini inançlarına göre seyahat etme sebepleri çeşitlilik gösterse de dini amaçlı seyahatler özellikle son yıllarda artış göstermiştir. Özellikle ruhsal bir rahatlama sağlayan ibadethaneler veya türbeler rekreasyonistler için hoş bir seyahatin yanı sıra kültür, tarih ve dinlerine ait mirasların bugünkü hayatı nasıl etkilediklerini görebilme olanağı sağlamaktadır. İnsanların kendi dinlerine mensup kişileri tanıma arzusu, dini görevlerini yerine getirme, kendi dinlerine ait önemli merkezleri görme isteği ve Allah'a isteklerini bildirmek veya dilek tutmak gibi sebeplerle dini mekânları ziyaret etmektedirler.

Bu çalışmanın amacı Kilis şehrindeki kutsal yerlerin inanç turizmi potansiyelini belirlemektir. Tarih boyunca birçok medeniyetin egemenliği altında kalan Kilis şehri bu medeniyetlere ait pek çok dini yapı da şehrin rekreasyon amaçlı ziyaret edilen mekânları arasında yer almaktadır. Şehirde İslâmiyet başta olmak üzere az sayıda Hristiyanlık ve Yahudiliğe ait dini yapılar da mevcuttur. Bu yapılardan sayı olarak en fazla olanları Osmanlı Dönemi'nde inşa edilen camilerdir. Çalışmada nitel ve nicel araştırma yöntemleri kullanılmıştır. Çalışma ile ilgili literatür taraması yapılmış, ikincil veri kaynaklardan elde edilen bulgular, sahada yapılan gözlemler ve ilgili kurumlardan alınan bilgi ve raporlar doğrultusunda mevcut veriler kullanılarak araştırma ile ilgili elde edilen veriler betimsel analiz metoduyla değerlendirilmiştir.

Anahtar Kelimeler: Türkiye, İnanç Turizmi, Kilis, Kutsal Mekanlar.

R&D AND INNOVATIVE APPROACH TO LIVESTOCK OF CATTLE RESEARCH IN TURKEY

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Abstract

The world population is increasing day by day and it is expected that the natural resources required to feed this population will be insufficient in the near future. For this reason, R&D and innovation studies come into importance in livestock which is a basic resource of food. In this respect, it is significant to develop technologies and methods to obtain more efficiency from the unit animal. There are constant new improvements in the field of R&D and innovation in the world. In Turkey, the largest R&D institution in the field of agriculture and animal husbandry is the General Directorate of Agricultural Research and Policies (TAGEM). TAGEM carries out studies to develop new technologies needed by the sector and to determine alternative policies to be implemented by the Ministry of Agriculture and Forestry. In Turkey, 89.5% of red meat and 90.5% of milk produced are obtained from cattle. Therefore, cattle research projects have an important place in the R&D carried out by TAGEM in the field of livestock. R&D studies are generally carried out in order to provide a healthy diet for the rapidly increasing population, to ensure food safety and reliability, to develop environmentally-friendly sustainable animal husbandry techniques, to obtain more efficiency from a unit animal and to increase exports. In the cattle research projects carried out in this context, studies are carried out to improve productivity, breeding, system, technology and increase fertility. In these researches, advanced technologies such as biotechnological, molecular biology, genetic methods and computer software systems are used. New technologies developed as a result of R&D projects lead to an increase in production, growth in the economy and changes in the socio-economic structure of the producers. This reason shows that R&D studies should be implemented without interruption. The aim of this study is to share information about R&D and innovative studies carried out by TAGEM in the field livestock of cattle in our country.

Keywords: Cattle, R&D, Innovation, TAGEM, Turkey

THE SYNCRETIC FORM OF ASHIG ART IN THE SYSTEM OF SPIRITUAL VALUES AZERBAIJAN

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Abstract
The article examines the historical roots of one of the most significant genres of art in Azerbaijan - Ashig art. Ashig art is one of the oldest layers of musical and poetic creativity of the Azerbaijani people. Being the true representatives of the people, the ashygs today are the only professional guardians and performers-interpreters of hundreds of tunes, songs and dastans. These established functions represent certain features and indispensable conditions of the Ashig art. As exponents of the way of thinking, feeling and figurative-thematic mood of this nationality, the ashygs, who created the enduring values of folk-poetic creativity, have very ancient roots that determine the ethnic composition of the folk language close to folklore. Shamanism was an early form of religion among the ancient Turkic-speaking tribes. Ozan, being one of the central persons of the epic plot, is presented in it as an artist-creator, possessing improvisational skill and as a wise counselor-mentor, and as a miracle worker. In this case, the syncretic nature of the artistic image of ozan is manifested, expressed in the synthesis of his own work. Embodying the appearance of Ashyg art on the stage of the spiritual life of the Eastern people, varsag marked a significant period in the history of oral tradition. Of course, due to its specificity, Ashig art will always play a leading role in relation to music as an art that operates with words - the universal material of human thinking. But music also renders its services, and first of all, contributes to the popularization of a poetic dastan or song. In view of the fact that in the art of the Ashygs there is the concept of "school" due to a sufficiently large number of metro-rhythmic varieties of the poetic text, today the Ashig art is designated as professional folk art of the oral tradition. As already indicated, having a deep connection with folklore, which is the source of all genres of musical and poetic heritage, Ashig art is the creativity of the middle class of society and is the bearer of a certain stratum of society. At the same time, at all times it was the middle class that was the companion of revolutionary ideas and led all strata of society.

Key words: syncretizm, art, system, spirituality, value.

Синкретическая форма ашыгского искусства в системе духовных ценностей Азербайджана.

Резюме

В статье рассматриваются исторические корни одного из самых значимых жанров искусства Азербайджана – ашыгского искусства. Ашыгское искусство является одним из древнейших пластов музыкально-поэтического творчества азербайджанского народа. Являясь истинными представителями народа, ашыги и в наши дни представляют собой единственных профессиональных хранителей и исполнителей-интерпретаторов сотен напевов, песен и дастанов. Данные установленные функции представляют собой определённые особенности и непременные условия ашыгского искусства. Являясь выразителями образа мыслей, чувств и образно-тематического настроя данной народности, ашыги, создавшие непреходящие ценности народно-поэтического творчества, имеют очень древние корни, определяющие этнический состав народного языка, близкого к фольклору. Шаманство было ранней формой религии у древних тюрко-язычных племён. Озан, являясь одним из центральных лиц сюжета эпоса, представлен в нём также, как художник-творец, обладающий импровизационным мастерством и как мудрый советчик-наставник, и как чудотворец. В данном случае проявляется синкретичность художественного образа озана, выраженная в синтезе самого его творчества. Претворяя появление ащыгского искусства на сцене духовной жизни восточного народа, варсаг обозначил собой значительный период в истории искусства устной традиции. Разумеется, в силу своей специфики ашыгское искусство всегда будет играть по отношению к музыке ведущую роль как искусство, оперирующее словом – универсальным материалом человеческого мышления. Но и музыка оказывает свои услуги, и прежде всего, способствует популяризации поэтического дастана или песни. В виду того, что в искусстве ашыгов присутствует понятие «школа» из-за достаточно большого количества метроритмических разновидностей стихотворного текста, на сегодняшний день ашыгское искусство обозначается как профессиональное народное творчество устной традиции. Имея глубокую связь фольклором, который является истоком всех жанров музыкально-поэтического наследия Востока, ашыгское искусство является творчеством среднего класса общества и носителем идей определённой прослойки социума. В то же время, во все времена именно средний класс являлся сподвижником революционных идей и вел за собой все слои общества.

Ключевые слова: синкретизм, искусство, система, духовность, ценность.

Ашыгское искусство является одним из древнейших пластов музыкально-поэтического творчества азербайджанского народа. Оно вобрало в себя и исторически сочетает музыкальное искусство и поэзию, танец и пантомиму, представленную театрализованным действием, а также риторику. Являясь истинными представителями народа, ашыги и в наши дни представляют собой единственных профессиональных хранителей и исполнителей-интерпретаторов сотен напевов, тысяч творений ашыгской и народной поэзии, монументальных дастанов, дошедших до нас по их сказаниям. Данные установленные функции представляют собой определённые особенности и непременные условия ашыгского искусства.

Являясь выразителями образа мыслей, чувств и образно-тематического настроя данной народности, ашыги, создавшие непреходящие ценности народно-поэтического

творчества, имеют очень древние корни, определяющие этнический состав народного языка, близкого к фольклору.

Шаманство было ранней формой религии у древних тюрко-язычных племён. Являясь служителями древней религии, шаманы были вождями племён, хранителями мифов. Их искусство представлялось в виде замысловатых ритуальных танцев, которые сопровождались пением и ударами в бубен, пением заклинаний, с помощью которых шаманы общались с духами. Целевой направленностью заклинаний было обезопасить племя от соседних племён, устрашить врага, умилостливить природу, послать дождь, уничтожить болезнь и т.д. Своими мистическими заклинаниями шаманы всячески укрепляли у соплеменников веру в эти божества, сопровождая свои заклинаниями игрой на различных музыкальных инструментах, прозаическими и стихотворными строками, пантомимными жестами. По сути, в данном действии были сохранены архаические черты, которые присутствуют и по сей день.

Большую роль в развитии ашыгского искусства - речитации стихотворного текста сыграло зороастрийское вероисповедование азербайджанской народности /IV в. до н.э./, т.к. чтение вед в Авесте Заратустры было стихотворно-речитативным. Сам факт авторства 17 гатов Авесты певца-поэта Бенджа говорит также и о её ашыгской направленности.

Озан, являясь одним из центральных лиц сюжета эпоса, представлен в нём также, как художник-творец, обладающий импровизационным мастерством и как мудрый советчик-наставник, и как чудотворец. В данном случае проявляется синкретичность художественного образа озана, выраженная в синтезе самого его творчества.

Опираясь на политематичность слова «ашыг», оно вполне может происходить от слова «ашыгламаг». Корень слова «ашыг» -происходит от арабского слова «эшг», а корень слова «ашых» - от архаического древнетюркского слова «аш». В конечном анализе происхождения слова «ашыг» приходят к выводу, что данное обозначение выражает – внушать людям свои мысли, убеждения, чувства. Именно в ашыгском искусстве впервые были соединены в органическом единстве элементы музыки, поэзии и танца и именно отсюда впоследствии они разъединились, начав развиваться самостоятельно. Это явление присуще именно восточной культуре, а конкретно, культуре тюркоязычных народов.

Претворяя появление ащыгского искусства на сцене духовной жизни восточного народа, варсаг обозначил собой значительный период в истории искусства устной традиции. Сложное и синкретическое искусство варсагов пользовалось большой популярностью среди племён, населявших территорию древнего Азербайджана и просуществовало довольно долго, вплоть до конца XV- нач. XVI в.в., когда во главе династии Сефевидов встал шах Исмаил, начавший объединение тюрко-язычных племён в единую государственность. Варсаги постепенно смешались с другими племенами, а их искусство уступило место ашыгскому искусству.

Лексические данные фольклора позволяют сделать вывод о существовании до термина «ашыг» терминов «озан», «яншаг». Сами озаны делятся на древних огузов, просуществовавших до IV до нашей эры и новых огузов, сыгравших определённую роль в объединении тюркских ханств в XI-XIII в.в. до н.э. Древние огузы поклонялись различным божествам –Гей Тюрку, Гей Танры, Умай, Ер Сулар. Сказки, предания, дастаны, посвящённые легендарному освободителю племени – Огуз-хану – до арабского завоевания были известны как огузские дастаны, а новые произведения народного творчества, созданные после арабского нашествия, получили название огузнаме. Сам Деде Коркут, возможно являлся прототипом Улу Тюрка.

Основное назначение эпоса – это поведать о чём-то важном, значительном, историческом, что касается многих людей, иногда поколений. Поэтому словесный материал дастана представляет для слушателей огромный интерес. Отсюда понятна

характерная особенность жанра, которая заключается в преобладании повествовательно-речевого элемента. Чтобы усилить впечатление от сказанного, а также для яркости дастанов, в песенной практике родилась особая форма эпического сказа, ритмизированная и тесно связанного с музыкой. В дастанном жанре мы не найдём отражения личных переживаний исполнителя, напев здесь не индивидуализирован в каждом конкретном случае, а всегда несёт обобщающий характер, поскольку здесь присутствуют обобщённые образы героического, возвышенного плана.

В азербайджанских дастанах немало сохранено примет и следов, явно перекликающихся с высказываниями, содержащимися в народных произведениях, в сочинениях летописцев, в древнем культурном наследии Мидии, Арана, а также государств и народов Закавказья.

Эпос «Китаби Деде Коркут», известный в средние века под названием «Огузнаме», вошёл в историю в виде легенд, преданий, сказок в творчестве многих тюркских народов. Однако многочисленные географические упоминания, сёла, исторические личности, племена, описываемые в нём, свидетельствуют в пользу того, что сказания Деде Коркута зародились в историко-географической среде средневекового Кавказа. Основная идея дастана – патриотическая, борьба огузов с иноземными захватчиками за свою землю, свой родной дом. Во главе всего племенного союза, изображённого в сказаниях, стоит хан ханов Баяндур, руководящий жизнью племени.

Главный герой эпоса – Деде Коркут – народный поэт, духовный вождь племенного соединения. Он участвует во всех празднествах, церемониях, восхваляет молодых богатырей, проявивших чудеса мужества, даёт имена. Каждый поэтический образ, обращения в дастанах эмоционально насыщены, образы матери, жены полны мужества, доблести, также как и мужские образы.

Многие высказывания Деде Коркута носят обобщающий характер, полны выводов и впоследствии смогли стать народными пословицами. Они имеют нравоучительный характер, воспитательная роль их несомненна.

«Чёрным домам, куда не приходит гость, лучше обрушиться».

«Прославляющим имя отца, данным на радость сыном хорошо быть»

«Если не помолиться богу, дело не удастся
Если не подаёт всемогущий бог,
Человеку не разбогатеть».

«Разве целуют руку сыну, когда перед вами отец?»

Каждое подобное высказывание в дастане содержит в себе мудрость восточного народа, гласящая о почтительном отношении к умудрённым жизненным опытом старикам, отцу, матери. Здесь утверждаются незыблемые этические нормы поведения для членов племени.

Рифмовка поэтической основы дастана, как видно, значительно отличается от современной рифмовки азербайджанского стихосложения, отличительная черта этих этических сказаний – простота, безыскусственность, напевность, что легко объяснить социокультурными параметрами того времени. С другой стороны, эти же сказания легко кладутся на музыкальный аккомпанимент в обозначенных границах. Об использовании музыкальных инструментов, о присутствии их постоянно идёт напоминание в тексте сказаний. Здесь наблюдается зарождение, сказывается ашыгское искусство, которое существовало лишь в устной народной традиции до определённого времени и вобрало в себя и испытало на себе веяние многих эпох.

Сам дастан «Деде Коркут» мог появиться только потому, что искусство озанов к тому времени достигло большой зрелости и совершенства. По лексическим данным дастана можно определить, что в изустной форме он мог существовать в VI-VIII в.в. То же самое можно отметить и в отношении «Тюрко-язычного дастана» Кашкарского, где

пословицы, крылатые выражения, притчи и, в особенности, песни, относятся, судя по времени фиксации к XI в., некоторые из которых являются продуктами доисламской эпохи и отражают в себе языковые особенности V-VI в.в.

Необходимый инструмент поэтико-музыкального творчества огуза – гопуз. Упоминание о гопузе встречается уже в творчестве Низами Гянджеви, где оно используется для создания атмосферы веселья и радости, царящих на придворных меджлисах, а также как общее название струнного инструмента, на котором играют с помощью плектра /мизраба/. Во второй части «Искандернамэ» /Игбалнамэ/ он пишет о «чуре», имея в виду, скорее всего маленький саз, напоминающий гопуз.

Наиболее сложной формой огузнаме, которую создавали огузы, и уходящей корнями в художественное творчество ранних огузов, являются дастаны. Народы мира, имеющие столь древнюю и богатую культуру, создали бессмертные эпосы, ставшие ценнейшим достоянием художественной мысли человечества. Это – «Илиада» и «Одиссея» греков, «Гильгамеш» шумеров, ассирийцев и вавилонян, «Рамаяна» и «Махабхарат» индийского народа, «Шахнаме» иранцев, «Шинго» японцев, «Песнь о Роланде» французов, «Песнь о Нибелунгах» немцев, «Нарты» осетин, абхазцев, адыгейцев и других народов.

У тюркских народов есть шедевры мирового эпического творчества, относящиеся к жанру огузнаме, это «Китаби деде Коркут», «Огуз каган», «Энгенегон», «Кочевье», «Бощ гурд», являющиеся ранними образцами эпоса, а также героического менгебе из цикла «Кёроглу» – «Гороглу», «Куругулу», «Манас», «Алпамыш», «Едиге», «Шурс», «Кози Корнеш-Баян сыну». В этом всемирном наследии значительное место занимают и те особенности, которые связаны с национальными традициями, обычаями и обрядами, с образом жизни и умонастроениями их творца-народа.

Будучи одной из ветвей многогранного устного народного творчества, музыкально-литературные жанры ашыгов постоянно обновляясь, отшлифовывались на протяжении веков, подвергаясь существенным изменениям. Анализ дошедших до нас жанров своим разнообразием наглядно свидетельствует о множестве устойчивых качеств, которые необходимо рассматривать для полноценного понимания сущности искусства ашыгов и творческой практики народных певцов Азербайджана. Исходя из неразрывной связи музыки и поэзии образуются специфические формы и жанры. Основной частью ашыгского искусства являются литературные, поэтические творения весьма разнообразные как по содержанию, так и по художественной форме.

Амин Абид в 1930 г. упоминает о слове «ашыг» как о титуле, высоком звании, присуждаемом популярным озанам уже в XI-XII в.в. В своём стихотворении, написанном в 7-слоговой форме, он восхваляет искусство ашыгов.

«Изливая свой восторг
Славят белый свет ашыги,
В тяжких поисках подруг
Пенят каждый след ашыги
Их судьба наотмашь бьёт
Уповают на народ.

Изнывают от невзгод
Терпят много бед ашыги.
Преданны, как соловьи
Жизни отдают свои.
В дружбе так же, как в любви
Чтят мужской завет ашыги».(6, 17)

Малые формы- наиболее встречающиеся в творческой практике ашыгов – это баяты, герайлы, гошма, тэджнис, диваны, мухаммес и другие. Музыкальное сопровождение их составляет разнообразное множество напевов, практикующихся на празднествах. Малые формы здесь являются общими как для искусства устной традиции, так и для письменной классической поэзии. Такие формы, как гошма, тэджнис, мухаммес встречаются в творчестве Низами, Физули, Насими. Но существуют свои специфические фольклорные разновидности как дастан, джыгалы тэджнис, устаднаме, харбазорба, гыфылбенд, бытующие только к практике ашыгов. Среди них такие формы как гошма, тэджнис и мухаммес имеют свои разновидности.

В то же время, дастан, являясь синтетическим жанром, состоит из различных частей, где происходит чередование стиха и прозы, и включает в себя малые формы /устаднаме, дейишме, гошма, гаравелли, гыфылбенд, дуваг-гашма и другие/. Тексты песен ашыгов написаны в стихотворной метроритмике «хеджа везни» или «бармаг хесабы», характеризующейся одинаковым количеством слогов в строке и называемым силлабическим стихом. Возникновению слогоисчислительного стиха способствовала закономерность, согласно которой формы слов и новые слова в тюркском языке образуются агглютинативным путём, т.е. присоединением аффиксов к корневой основе. При агглютинации слово изменяется путём приклеивания прилеп, причём каждая из них имеет своё грамматическое назначение.

Стихотворные формы имеют строфическое строение. В каждой строке бывает 7,8,11,15,16 слогов. Строфическое стихотворение называется у ашыгов «гатар» /строй/. Оно представляет собой строки, соединённые между собой рифмой, которые образуют строфу, затем эти строфы соединяются между собой по смыслу. Часто здесь часто используются «редифы», служащие нередко заглавием стихотворению, по сути, это одинаковые послерифменные окончания стихов.

Самая распространённая форма строфы в ашыгском стихосложении – это четверостишие, которое имеет много разновидностей форм и жанров. Это – гошма – сюда относятся устаднаме, видждунаме, гыфылбенд, зербе-зорба, хэнжэ, аяглы гошма, тэджнис; это баяты – в форме додагденмез, теджнис; это – герайлы – в форме алифлам, дилденденмез; это теджнис – в форме додагденмез, теджнис, икибашлы теджнис, ногтэсиз тэджнис, аяглы теджнис, джыгалы еджнис; это диваны – в форме зэнджирлэрмэ.

Ашыгские напевы органично связаны с сазом, он является неотъемлимой частью творчества и исполнения ашыгского репертуара. Слово «саз» произошло от слова «саздамаг», настраивать. На самом современном сазе отражены все исторические этапы развития напевов, их интонационное и ладовое усложнение. Саз – старинный струнно-щипковый инструмент с фиксированными на грифе ладками. Внешне от похож на лютню или уда, имеет грушевидный корпус и очень длинный гриф. Он изготавливается кустарным образом, специалисты делают его из тутового дерева, может подойти и ореховое. Существует 3 вида саза, беюк саз /большой саз/, имеющий 8-9 струн, называемый также «ана» саз. Ворой вид – джуре саз или голтуг сазы /маленький, подмышечный/, у него 4-5 струн и звучит он на октаву выше других видов. Третий вид – тавар сазы – имеет средние размеры, длина его 120 см., это наиболее распространённый и популярный инструмент у современный ашыгов.

В ашыгском искусстве неправомерно требовать от музыки глубины содержания и оригинальности формы, если функция её заведомо подчинённая, прикладная. Поэзия была и остаётся здесь для музыки источником ценнейших идей и художественных мотивов, образов, настроений, словообразующих и речевых интонаций, выдвинутых самой жизнью, эпохой, но получивших в этом виде искусства такое осмысление и такую художественную разработку, без которой, быть может, вряд ли смогла бы музыка воплотить их непосредственно, минуя литературу.

Разумеется, в силу своей специфики ашыгское искусство всегда будет играть по отношению к музыке ведущую роль как искусство, оперирующее словом, языком – универсальным материалом человеческого мышления. Но и музыка оказывает свои услуги, и прежде всего, способствует популяризации поэтического дастана или песни, которая даёт вдохновение для полёта во времени. Многие поэты из числа самых значительных остались бы самыми забытыми и погребёнными в истории, если бы музыка не присутствовала, она смогла сделать их незабываемыми.

Выявлена историческая, общественная и социальная значимость ашыга в судьбе тюркоязычных народов, представив его как хранителя традиций, заложенных в самой

природе устного народного творчества. Он, по сути, является не только живым воплощением, выразителем, «языком» народных чаяний, он – сама «память», пусть с ограничениями, вариантностью, искажениями, но всё же – доносящая столь бесценное сокровище до последующих поколений.

В виду того, что в искусстве ашыгов присутствует понятие «школа» из-за достаточно большого количества метроритмических разновидностей стихотворного текста, на сегодняшний день ашыгское искусство обозначается как профессиональное народное творчество устной традиции. Как уже обозначалось, имея глубокую связь фольклором, который является истоком всех жанров музыкально-поэтического наследия, ашыгское искусство представляется творчеством среднего класса общества и является носителем идей определённой прослойки социума.

В то же время, во все времена именно средний класс являлся сподвижником революционных идей и вел за собой все слои общества. Выявляя корни духовных традиций Азербайджана, в числе которых немаловажное место занимает ашыгское искусство, мы считаем необходимым представление исторических корней и роли в жизни народа в целях воспитания гражданских чувств подрастающего поколения.

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THE MATTER OF PUBLISHING A BOOK

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Abstract

Egypt has a special place in Mehmed Ârif Bey's life (1845-1897). Mehmed Ârif Bey, who goes to Egypt with Gazi Ahmed Muhtar Pasha, stays there until the end of his life. His years in Egypt turns Mehmed Ârif Bey, who is a jurist by profession, into a writer. His works, in which Egypt occupies an important space, are published posthumously by his sons. These works, sorted by the year of publication, are "Binbir Hadis (A Thousand and One Hadiths)" 1901 and "Başımıza Gelenler (Those That Have Befallen Us)" 1903. Mehmed Ârif Bey, who gives a separate section to Egypt in "Başımıza Gelenler" which deals with the Ottoman-Russian War of 1877-1878, interprets some hadiths in "Binbir Hadis" by the events he experienced in Egypt. One of these incidents is about publication of a book. The incident is this: the name of Gazi Ahmed Muhtar Pasha, whose reason to be in Egypt is to negotiate the departure of British troops from Egypt as per the Ottoman-British Agreement dated 24 October 1885, is wanted to be written into the epilogue of a book, to the publication of which he provided moral and material support. Yet, those who are responsible for the revision of the book do not want to write his name. Then the one who made the request writes the epilogue himself. But when the book is in the printing process, this time the staff of the printing house object to the epilogue. The relevant authority finds their objection valid, and the epilogue is omitted from the book. The holder of the request also backs out, worrying that the epilogue might cause an Ottoman-British tension. At the end, the book is published without the epilogue and thus without the phrase "who is in Egypt to negotiate the departure of the British" which followed the name of Muhtar Pasha in the epilogue. This conduct against an Ottoman pasha who would later become grand vizier occurs in an opposite fashion when an heir to the British throne came to Egypt. While such events take place in Cairo, Egypt, a consulship region of the Ottoman State, similar events take place in the İstanbul, the capital, the place of embassadry. British are supported against the Boers who are fighting an independence war. A letter of support is written to British ambassador and in fact later some youth harness themselves to his cart instead of horses. Therefore, it becomes evident that in both cities, Cairo and İstanbul, intellectual invasion is also present alongside military occupation.

Keywords: Book Publication, Heir's Visit to Egypt, Letter to the British Ambassador, Friends of England, Boers

BİR KİTABIN TAB'I MESELESİ

Özet

Mehmed Ârif Bey'in (1845-1897) hayatında Mısır önemli bir yer tutar. Gazi Ahmed Muhtar Paşa (1839-1919) ile birlikte 1885'te Mısır'a giden Mehmed Ârif Bey hayatının sonuna kadar orada kalır. Hukukçu olan Mehmed Ârif Bey'i Mısır yılları aynı zamanda yazar da yapar. Mısır yıllarının önemli yer tuttuğu eserleri vefatından sonra oğulları tarafından yayımlanır. Bu eserler yayım tarihlerine göre; 1. Binbir Hadis, 1901; 2. Başımıza Gelenler, 1903 şeklinde sıralanabilir. 1877-1878 Osmanlı-Rus Savaşı'nı konu alan "Başımıza Gelenler"de, Mısır'a ayrı bir bölüm ayıran Mehmed Ârif Bey, "Binbir Hadis"te de, bazı hadisleri Mısır'da yaşadığı hadiselere göre yorumlar. Bu hadiselerden biri de bir kitabın tab'ı meselesidir. Mesele şudur: Mısır'da bulunma sebebi, 24 Ekim 1885 tarihli Osmanlı-İngiliz Anlaşmasına göre, İngiliz Askerlerinin Mısır'dan tahliyesini müzakere etmek olan Gazi Ahmed Muhtar Paşa'nın ismi, basımına maddi ve manevi katkıda bulunduğu bir kitabın hatimesine yazdırılmak istenir. Ancak kitabın tashihini yapanlar yazmak istemezler. Bunun üzerine talebin sahibi hatimeyi kendi yazmak zorunda kalır. Ancak basım aşamasında iken bu sefer de matbaa görevlileri duruma itiraz ederler. İtirazları yetkili merci tarafından yerinde bulunularak hatime kitaptan çıkarılır. Talebin sahibi de, hatimenin bir Osmanlı-İngiliz gerilimine yol açacağı gerekçesiyle geri adım atar. Böylece kitap hatimesi çıkarılarak, Muhtar Paşa'nın isminin bulunduğu, "İngilizlerin tahliyesini müzakere etmek üzere Mısır'da bulunan" ibaresi yazılmadan yayımlanır. Daha sonra sadrazam olacak olan bir Osmanlı paşasına reva görülen bu muamele İngiltere tahtının bir varisi Mısır'a geldiği sırada tam tersi bir şekilde tezahür eder. Osmanlı Devleti'nin konsolosluk bölgesinde, Mısır'da, Kahire'de bunlar olurken Payitahtta, İstanbul'da, büyükelçilik bölgesinde de benzer olaylar vukuu bulur. Bağımsızlık savaşı veren Boerlere karşı İngiltere desteklenir. İngiliz elçisine destek mektubu yazılır ve hatta daha sonra birtakım gençler onun arabasına kendilerini at yerine koşarlar. Böylece her iki bölgede, Kahire ve İstanbul'da, askerî işgalin yanı sıra fikrî işgalin de var olduğu ortaya çıkar.

Anahtar Kelimeler: Kitap Tab'ı, Veliahdın Mısır Ziyareti, İngiliz Elçisine Mektup, İngiliz Muhipleri, Boerler.

Mehmed Ârif Bey'in (1845-1897) birçok devlet görevi yaptıktan sonra en son görev yeri Mısır olur. Osmanlı Devleti ile İngiltere arasında yapılan anlaşma gereği Mısır'a atanan Gazi Ahmed Muhtar Paşa'nın maiyetindeki Mısır Fevkâlade Komserliği Başkâtibi unvanlı görevini hayatının sonuna kadar sürdürür. Görevi başında iken tedavi amacıyla geldiği İstanbul'da vefat eden Mehmed Ârif Bey'in iki eseri vardır: 1. "Binbir Hadis" (Mısır, 1901), 2. "Başımıza Gelenler" (Mısır, 1903). Vefatından birkaç yıl sonra oğulları Celâleddin Ârif ve Necmeddin Ârif tarafından Kahire'de yayımlanan bu eserlerde yazar isminin hemen altına onun son görev yerindeki unvanına da yazılmıştır: Mısır Fevkâlade Komiserliği Başkâtib-i Esbakı.

Mehmed Ârif Bey'in eserleri ile görevleri arasında bir ilgi kurulabilir. Her ikisini de Mısır'da yazdığı anlaşılan bu eserleden ilki, yayım tarihinin aksine, "Başımıza Gelenler" adlı eserdir. Bu eser, Mısır'la ilgili son bölümü dışında, 93 Harbi diye de bilinen, 1977-1978 Osmanlı-Rus Savaşı'nda Anadolu Ordusu Başkumandanı olan Gazi Ahmed Muhtar Paşa maiyetindeki mühimme başkâtipliği göreviyle ilgilidir. Yine aynı şekilde, ikinci eseri, "Binbir Hadis"in de, Gazi Ahmed Muhtar Paşa'nın Mısır Fevkâlade Komiseri olması dolayısıyla getirildiği

Mısır Fevkâlade Komserliği Başkâtipliği göreviyle ilgili olduğu söylenebilir. Daha doğrusu tam öyle olmasa da, en azından bu çalışma, böyle bir ilginin sonucudur.

Mehmed Ârif Bey'in "Binbir Hadis" adlı eseri yazma sebebi, yerli kaynakların yerini yabancı kaynakların almaya başlamasıdır. Tanziamat döneminde Batı'dan yapılan tercüme eserlerin Kur'an ve hadislerin bile önüne geçtiği düşüncesi onu böyle bir eser yazmaya yöneltmiştir. Ali Akyıldız, TDV İslâm Ansiklopesi, "Mehmed Ârif Bey" maddesinde, bu eserle ilgili yaptığı değerlendirmede konuya tam da böyle yaklaşır:

"Müellif, Montesque'nün Kanunların Ruhu adlı eserinde yer alan, "Her kavim lâyık olduğu hükümeti bulur." sözünün çok daha önce Hz. Peygamber tarafından, "Bulunduğunuz duruma göre idare edilirsiniz." hadisiyle ifade edildiğini belirterek bu bakış açısıyla Süyûtî'nin el-Câmi'u'sagîr'inden seçmiş olduğu eserleri eserinde şerheder. Kitabın önsözünde Batı kültürünün, özellikle bu kültürün Voltaire, Jean-Jacques Rousseau ve Montesquieu gibi temsilcilerinin abartlı bir şekilde yeni nesillere tanıtıldığını söyleyerek buna karşı çıkmakta ve bizim kültürümüzde de değerli müelliflerin ve eserlerin bulunduğunu belirtmektedir." (Ayyıldız, 2003, 443)

Mehmed Ârif Bey, "Binbir Hadis" şerhinde, Mısır'da bulunma gerekçesi olan görevi dolayısıyla karşılaştığı hadiselere de yer verir. Bunlardan biri de, biri âmir, Gazi Ahmet Muhtar Paşa, Mısır Fevkâlade Komiseri ve diğeri memur, Mehmed Ârif Bey, Mısır Fevkâlade Komiseri Başkâtibi görevleriyle ilgilidir. Osmanlı Devleti ile İngiltere arasında 1885 yılında yapılan anlaşma gereği Mısır'a gelen bu âmir ve memurdan; âmir olanı 1885-1908 yılları arasında, memur olanı ise, 1885-1897 yılları arasında Mısır'da bulunurlar. Mısır'da bulunmalarının gereğini yerine getirirken de bazı hadiselerle karşılaşırlar. Bunlardan biri de bir kitabın tab'ı meselesidir.

Mehmed Ârif Bey, "Binbir Hadis" şerhinde, 498'inci hadisi şerh ederken bu hadiseye de yer verir. Söz konusu hadis şudur: "Nâsın eşirrâsı, şerâr-ı ulemasıdır." (Mehmed Ârif, 1909, 208) "Halkın en şerlileri, alimlerin şerlileridir." anlamına gelen bu hadisin şerhinde Ezher âlimlerinin Osmanlı Devleti'ne karşı tutumları eleştiri konusu yapılır. Âlimler baskısı azalan Fîrûzâbâdî'nin el-Kāmûsü'l-Muḥîṭ adlı arapça sözlüğüne Murtazâ ez-Zebîdî'nin (ö. 1205/1791) yazdığı şerh olan "Tâcü'l-Arûs" adlı eserin yeni baskısının hatimesine bu baskıya destek veren Gazi Ahmed Muhtar Paşa'nın adını yazmak istemezler. Daha doğrusu onun Mısır'da bulunma sebebinin İngilizlerin tahliyesi olduğunu yazmaktan kaçınırlar. Hatta bırakın böyle bir tahliyeyi sanki tam tersine Osmanlı Devleti'nin tahliyesini ister gibi bir tutum sergilerler. Mehmed Ârif Bey bu durumu "Nâsın eşirrâsı, şerâr-ı ulemasıdır." hadisinin şerhinde şöyle anlatır:

"Âtide münasebet geldikçe, bazı yerlerde dahi görüle [ceği] veçhile, Mısır'da müstevli olan İngilizlerin Mısır'ı tahliye etmek esası üzerine yine İngilizlerle müzakereye taraf-ı saltanat-ı seniyeden memur olan Gazi Ahmed Muhtar Paşa refakatine memûren fakir de Mısır'a gelmiş idim. İşin cihet-i siyasisinin ne olup ve nerede kaldığının yazılması tarih-i nüvisân-ı asra havale ile biz sadedimizi beyan ederiz.

Nüshasının nedreti hasebiyle bazı ehl-i maarifin teşviki üzerine lügât-ı müdevvine-i Arabiye'den kâmûs-ı şerhin (Tâcü'l-Arûs) tabını deruhte ve iltizam eden Matbûât-ı Mısıriye Nâzır-ı Sâbıkı Cevdet Bey'in, kitabın tabı esnasında, düşeceği müşkülatı bertaraf etmek üzere muâmale-yi tab'iyeyi, müşârünileyh hazretleri himayesine aldı. Fiilen ve nakden muavenet etti, kitabın tab'ı bitti. Hatimesinde kitabın tab'ında dûçar olunan müşkülat yazılırken sevk-i kelâm ile müşârünileyh Muhtar Paşa'nın Mısır'ın İngilizlerden tahliyesi müzakeresini âtîmek üzere taraf-ı devlet-i aliyeden memuren Mısır'a gelmiş olduğunun sıfat ve elkâbı sırasında zikri icap eder. Kitabın tashihini deruhte eden Câmi-i Ezher'in yetiştirdiği lügaviyûndan ve ulemâ-i meşhûreden Şeyh Kâsım ile Şeyh Muhammed Râşid, Muhtar Paşa'nın İngilizler ile

tahliye müzakeresini etmek üzere taraf-ı hilafetten memuren Mısır'a gelmiş olduğunu yazamazlar. Cevdet Bey ısrar eder, bu iki söz hikâye-i hâlden ve kitabın tab'ı esnasında Paşa'nın ne münasebetle Mısır'da bulunduğunu ifadeden ibarettir, bunda korkacak bir şey yoktur, hakikat-i hâl böyle değil mi, bu zat niçin Mısır'da kaldı, ve elân ne münasebetle Mısır'da bulunuyor? yolunda birçok sözler söyler, hoca efendileri ikna mümkün olamaz. Paşa'nın niçin Mısır'da kaldığı bizce meçhuldür, sözünde inat edip dururlar. Bilahare Cevdet Bey eğer var ise mesuliyeti kendisi yüklenerek hâtimeye o iki kelimeciği kalemiyle ilave eder. Ve bütün hâtimesini de kendi namına yazar, Efendiler hazerâtı da surette müsterih olduklarını gösterirler.

(…)

Her ne ise Cevdet Bey savuştuktan sonra Müslüman ve seyyid namını takınan matbaacılardan birisi o hâtimeciği alır, bu ibareyi tab' ettirmek istiyorlar ruhsatınız var mı yollu suret-i istîzânda, bir heyet-i tabasbuskârı ile Mısır'ın o tarihte Dahiliye Nazırı ve Reis-i Nazırı olan Riyaz Paşa'ya götürür. Paşa'nın eli ayağı ve tedbiri şaşar, Cevdet Bey'i çağırarak Muhtar Paşa Hazretlerinin İngilizlerin Mısır'dan çıkmaları müzakeresine memuren İstanbul'dan gelmiş olduğu lafzının hâtimeden tay edilmesini rica eder. Cevdet Bey her ne kadar ikna ve iskâta kıyâm etmek ister ise de, mümkün olmaz. Bu hâteme Dahiliye Nazırı görmeksizin tab' olunmuş olsaydı, kimsenin nazar-ı dikkâtini celp etmez idi. Mademki bu habis herifler bu ibareyi Dahiliye Nazırına götürüp gösterdiler, şimdi hilaf-ı iltizam olunur ise İngiliz Konsolosuna da irâe ile başımıza bir mesele çıkarırlar. Âtîde zuhûru melhûz olan fenalıktan vikâye-i maslahat olunmak için Cevdet Bey de bizzarûre tashih ile avdet eder. (Mehmed Ârif, 1909, 208-209)

Yine aynı şekilde, bir başka hadis, 535'inci hadis, "İstifâza-i ilim ile geçen bir saat, ibadet ve taatle geçirilen bir geceden, ve yine telakki- ilm-i şerîf ile geçiririlen bir gün, üç ay oruç tutmaktan hayırlıdır." hadisi şerh edilirken Ezher ve dolayısıyla âlimlerin durumu eleştiri konusu yapılır:

"Taleb-i ilm yolunda varid olan ehâdis-i şerife üzerine Mısır ulemasından birisiyle Mısır'da söz ederken elhamdülillah ve'l-minne bugünkü yani bin üç yüz yedi sene-i hicriyesinde nefs-i Kahire'de bulunan Cami-i Ezher'de yedi sekiz bin talebe-i ilmin vücudundan ve dört yüz nefer müderrisin küll-i yevm tedris-i ulûm-i âliye vâliye ile meşgul olduğundan haber verdi. Okunan dersler nedir dedim, hadis, tefsir, fıkıh ve nahivdir cevabını aldım. İşgal olunan ulûm-i şerifenin kadir ve şeref-i zâtiyelerine diyecek yok ise de bunların harice ve ahlaka tatbikinden görülen faideler nedir, hukuk-ı ümmet-i İslâmiye nasıl muhafaza olunur diye sordum, okunan şeyler meâni-i Kur'aniye ve ehâdise-i şerifeye intisap, usûl ve füru'-ı dine iktisap içindir. Hukuk-ı İslâmiyenin muhafazası bahsine gelince, bu hukuk ayaklar altındadır. Bir Frenk; bir müslim-i vatananinin hukukuna istediği gibi tecavüz eder. O müslim-i biçare ihkâk-ı hukuk edilecek bir merkez -i müracaat bulamaz. Memleketin hayri ve menfaati bütün bütün ecnebi Frenklere münhasırdır. Cemaat-i İslâmiye, umûmen Nasârânın çiftçisidir. Müslimînin elinde ve ocağında her ne kazanılmış ve âtiyen kazanılacak ise, bilvasıta veya bilavasıta kâmilen Frenlere aittir. Elhasıl biz mahkum onlar hâkim, biz, biz zelil onlar müteâli, biz abd onlar seyyiddir, dedi. Şu hâlde Cami-i Ezher'de tahsil olunan ulûm-ı şerife ile iştigal abes olmaz mı? Elhamdülillah dersler okunuyor, ilm-i tahsil olunuyor yolunda söylemiş olduğumuz cümle-i fahriyeye bu hâl münâkiz gelmez mi? Zira bir ilim ki, cemiyetimizden maksûd olan şeyi muhafaza etmez, bir ilim ki, tadiyât-ı ahlakı men edemez, onun tahsili mücerred evkât-ı aziziyemizi iştigal etmek için oynanılan oyunlardan biri olmuş olur dediğimde, hayır benim maksadım, herkes adâb-ı diniyesini öğreniyor ve icabât-ı diniyeye talimsiz kalmıyor demektir dedi.

(…)

Hatta sene-i merkuma [1307/1890] zarfında Mısır'ı ve ahâli-yi İslâmiyenin rızası hilafına olarak ve Mısır'da bulunan askerini gözden geçirmek tesis-i satvet etmek için İngiltere kraliçesinin büyük oğlu veliahdı Prens Digal Mısır'a geldiği sırada, memûrîn-i hükûmet ve eşraf ve sâdât ve bilumum tüccar ve esnaf istikbal için demir yol mevkiine gittiler. Mısır'ın kâziyü'l-kuzâtı Kuyucaklızâde İstanbul payelilerinden İstanbullu Abdurrahman Efendi ve Hanefî Müftüsü Şeyh Abbâsü'l-Mehdî ve Şeyhülislam denilen ve Cami-i Ezher'in evvel-i tarihinde Şeyhü'l-Meşâyihi bulunan Şeyh Muhammed Enbâbî ve Hakaniye Müftüsü Üstazü'l-Ekrem Şeyh Muhammed Nebâ ve emsali ve nakîbü'l-eşraf ve Şeyh Bekrî ve Şeyhü's-Seyâdât Seyyid Ahmed Abdülhalik cümleten cicili bicili büyük üniformalarını giyinmiş ve nişanlarını tâlik eylemiş oldukları hâlde prensin istikbaline çıktılar. Ve bununla da kanaat etmeyerek, prens için taraf-ı hükûmetten ikâmetgâh tahsis olunan ve nefs-i Kahire'ye bir saat mesafede bulunan Cîze Kasrına giderek mücerred prensin tebrik-i kudûmü için koşuştular. Prensin huzuruna kabul olunmak imtiyazını haiz olmadıklarından yalnız daire-i teşrifatında mevcut bulundurulan defter-i bendegâne esâmi-i şerifelerini [!] kayd ile avdet ettiler." (Mehmed Ârif, 1909, 223-225)

Resmen Osmanlı Devleti'nin bir parçası olan ama fiilen İngiltere'nin işgali altında bulunan Mısır'da bunlar yaşanırken İstanbul'da da benzer hadiseler vukuu bulur. Bir farkla ki, Kahire'deki âlimlerin yerini İstanbul'da şair ve yazarlar alır. Kahire'dekiler İngilizlerin Mısır'dan tahliyesini istemez gibi iken, İstanbul'dakiler de sanki İngilizlerin işgalini ister gibidirler. Hüseyin Cahit Yalçın, "Edebiyat Anıları" adlı eserinde, "Bir İki Olay" başlığı altında ele aldığı bu konuya (Yalçın, 2010), Ayvazoğlu da, "Fikret" adlı eserinde ayrı bir başlık açar. Ayvazoğlu söz konusu eserinin "Majestelerinin Elçisine Muhtıra" başlıklı bölümünde, yetmiş civarında kişi tarafından imzalanan bildirinin tam metnini yayımlar. Bağımsızlık savaşı veren Boerlere karşı İngiltere'nin desteklendiği bu bildiriyi, Mehmet Rauf, İsmail Safa Hüseyin Siret ve Tevfik Fikret'in bulunduğu bulunduğu on kişilik heyet 20 Kasım 1899 tarihinde saat altı sularında şifaen İngiliz sefirine sunacaktır (Ayvazoğlu, 2019):

"Majestelerinin Elçisi Sir Nicholas O'Conor Cenaplarına,

Edvar-ı tarihiyesini teşkil eden harekât ve fütuhatında hürriyet ve adalet gibi iki vecibe-i insaniyeti tahkim ve tamim uğrunda en çok fedakârlıklar etmiş, en ziyade muvaffakiyetler göstermiş bir hükümet-i muazzama olmasına mebni İngiliz devlet-i fahimanesinin rehnüma-yı medeniyet unvan-ı celilesiyle tebcil etmek revadır. Hususiyle bir asırdan beri Devlet-i Aliyye'nin hukukunu müdafaa ve istiklalini te'minde ma'nen ve maddeten ibzal eylediği hayırhahane mesaî ve müzaheretile Osmanlıların kalplerinde mevcudiyet-i siyasiyeleriyle kaim ve daim olacak hiss-i muhabbet husule getirmiş olan İngiliz devlet-i muhteremesi daima saadet-i ümemde menafi-i mahsusa aramak gibi alicenabane bir fikr ile mütecelli meslek-i siyasiyesini takdir etmek vazifefesiyle herkesden ziyade Osmanlıları mükellef kılmıştır.

Nevahi-i şimaliyesi İslâmiyet içinde münevver iken cihat-ı sairesi zülm ü cehl ve bedevat içinde yuvarlanan Afirka kıtasının aksam-ı mühimme-i cenubiyesine atf-ı nazar olunub da insan ticareti gibi menafi-i gayr-ı meşrua arkasında oralara kadar koşan akvam-ı mutaassıbanın tazallumat-ı gaddaranesine maruz kalmış kabail-i zenciye ile nice binlerce nüfus-ı İslâmiyeye bezl ü te'min edilen hürriyet ve adaleti göz önüne getirirsek İngiliz millet-i muazzamasının bütün âlem üzerine neşr-i envar-ı adalet ve hürriyet eylemesi yegâne matmah-ı nazar ittihaz eylediği düşünülünce bu def'a Afrika-yı Cenubi Cumhuriyeti'ne karşı deruhde etdiği harbde dahi mazhar-ı muvaffakiyet olması temenniyat-ı vezaif-i insainye sırasında görülüyor.

İşte bu vazife-i mukaddeseyi Osmanlı şübbanı namına imza eder ve hissiyat-ı ihtiramkâranemizin kabulüyle devlet-i metbualarına arzını niyaz eyleriz." (Ayvazoğlu, 2019, 234)

Ahmet İhsan Tokgöz de, "Matbuat Hatırlarım" adlı eserinde, bu hadiseyi, "İstibdat Gözleri Nasıl Kör Ederdi?" başlığı altında verir. Tokgöz'ün "İngilizlerin Boer muharebesinde gençliğin lüzumsuz nümayişi" alt başlığı altında verdiği bölümden bir parça okunabilir:

"Bağımsızlığını arayan Boer'lerle onların aziz reisi Krüger, dünyaya asi ve hain gösterilmişti. Bu siyaset propagandasına İstanbul çubuk inanmıştı. Çünkü Abdülhamid'in zalim idaresinden yanmış olan Türk aydınları, despot padişahın İngiltere'ye karşı gösterdiği güvensizlikleri, İngiltere'ye yöneltmek için en doğru belirtti saymışlardı. Türk aydınları adeta derin bir yanılgıya uğramıştı. Bu aldanışa ben de dahildim, bütün Edebiyat-ı Cedide ailesi de aynı kanıdaydı. O zaman biz İngiltere'yi dünyanın en özgürlükçü, en insaniyetli idaresi sanıyorduk. Zaten bu kanaatin etkisiyle 1908 inkılabında aydınların ruhunda derin bir İngiliz sevgisi vardı ve bu o kadar yüksekti ki, 1908 Temmuzu'nun 23'ünde İstanbul'da bulunmayan İngiltere elçisi Malet şehrimize döndüğü zaman Sirkeci istasyonunu baştanbaşa doldurmuştuk; elçiyi candan ve gönülden alkışlıyorduk. Sonunda coşkun gençler elçinin arabasını çeken atları söktüler, arabayı kendi kollarıyla çektilerdi! Bu bölümü yazmaktan amacım, Meşrutiyetin ilanına kadar Türk aydınlarının siyasi meylini ve inanışını göstermektir. Bu İngiliz sevgisi yüzünden Boer muharebesinde hepimiz, bilmeden zavallı Boer'lere karşı ve İngilizlerin lehine konuşuyorduk." (Tokgöz, 2012, 133-134

Tevfik Fikret, Galatasaray Lisesinden Robert Kolejine geçişini,"Bugün sa'y ve irfânım tebdîl-i tâbi'yet ediyor demektir." (Tevfik Fikret, 2021, 1673) şeklinde değerlendirir. Fikret bu değerlendirmeyi Hüseyin Cahit Yalçın'ın Tanîn gazetesinde yazdığı "Şâir Yerine Âlim" yazısı üzerine yapar. Yazıdaki şâir Fikret, âlim ise Salih Zeki'dir. Galatasaray Lisesine Tevfik Fikret'in yerine Salih Zeki'nin müdür olarak atanması Yalçın'ı böyle bir yazı yazmaya sevk eder. Fikret'in, bu yazı üzerine yaptığı, "Bugün sa'y ve irfânım tebdîl-i tâbi'yet ediyor demektir." şeklindeki açıklama; kurum bazında, Galatasaray Lisesinden, yani Fransız çalışma ve eğitim hayatından; Robert Kolejine, yani İngiliz çalışma ve eğitim hayatına geçiş anlamına geldiği düşünülebilir. Yalçın'ın söz konusu yazısı ülke bazında ele alındığında ise, "Fransa yerine İngiltere" diye de okunabilir ve gerek Kahire'deki gerek İstanbul'daki genel sıralamanının bu şekilde olduğu söylenebilir.

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THE "NEW WAVE" IN EGYPTIAN LITERATURE AND ITS REPRESENTATIVES

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Abstract

The socio-political changes that took place in Egypt in the 19th century laid the foundation for the process of rapprochement with the literature of other countries, which led to the formation of new literature. The new literature manifests itself in new genres, themes, ideas and images.

In 1960s and 1970s, "free creativity", "new aesthetic and ethical views", "free, borderless literary expression" began to emerge in the new Egyptian literature, due to the demands of time and conditions, which formed the "new wave" literature. The main task of the movement was to "democratize literature." The representatives of the "new wave" believed that by doing so, they would directly democratize the society. Also, the works of these authors, called "sixties", were dominated by pessimistic tones, there were vain dreams, hopes, disappointments, resentments. This mood was reflected in the psychological portraits of the images and the works. This was directly related to the socio-economic situation in Egypt at the time of the emergence of the trend, the political climate, and the prevailing public opinion in society.

Like in all spheres of life in the country, it was impossible to ignore literature and not be engraved in the spiritual heritage of the people. However, the representatives of this movement did not give up the dream to restore the historical power and to create a new, democratic Egypt. Regardless of genre, subject, form, and content, most works emphasized that the Arabs were not slaves, but brave and progressive, rich in historical conquests and contributing to human civilization.

Representatives of the movement often analyzed the bitter consequences of the successive processes in the Egyptian government, the implications of foreign and domestic policy, socio-economic decisions and problems in society, often conveying all these realities through bitter humor and irony.

Yusuf Al-Sharuni, Yusuf Idris, Suleiman Fayad, Jamal al-Qitani, Yahya Tahir Abdullah, Baha Tahir, Sanallah Ibrahim are among them.

Keywords: immigrants, Egypt, Arabic literature, migration

MİSİR ƏDƏBİYYATINDA "YENİ DALĞA" ƏDƏBİ CƏRƏYANI VƏ NÜMAYƏNDƏLƏRİ

Özət

XIX əsrdə Misirdə baş verən ictimai-siyasi dəyişikliklər digər ölkələrin ədəbiyyatı ilə qarşılıqlı yaxınlaşma prosesinə zəmin yaradır ki, bu da yeni ədəbiyyatın formalaşmasına bünövrə olur. Bu, özünü yeni janrlarda, mövzularda, ideya və obrazlarda büruzə verir. Misir ədəbiyyatı tarixində önəmli inkişaf mərhələsi sayılan həmin dönəm isə XX əsrin ikinci yarısında daha fərqli ədəbi mühitin, yeni tendensiyaların yaranmasına astana olur. Beləki, 60-70-ci illərdə zamanın, şəraitin tələbi ilə yeni Misir ədəbiyyatında "azad yaradıcılıq", "yeni estetik və etik baxışlar", "sərbəst, sərhədsiz ədəbi ifadə tərzi" cücərməyə başlayır və bu, "yeni dalğa" ədəbiyyatını formalaşdırır.

Cərəyanın qarşısına qoyduğu əsas vəzifə "ədəbiyyatın demokratikləşdirilməsi" idi. "Yeni dalğaçılar" bununla bilvasitə cəmiyyətin də demokratikləşməsinə nail olacaqlarını düşünürdülər.

Həm də "altmışıncılar" adlandırılan bu müəlliflərin yaradıcılığında bədbin tonlar üstünlük təşkil edir, puç olmuş arzular, ümidlər, məyusluq, küskünlük hiss olunurdu. Onların bu əhval-ruhiyyəsi obrazlarının da psixoloji portretlərinə, əsərlərin qayəsinə hopurdu. Bu isə cərəyanın yaranmağa başladığı dövrdə Misirin sosial-iqtisadi durumu, siyasi ab-havası, cəmiyyətdə üstünlük təşkil edən ictimai fikirlərlə birbaşa əlaqəli idi. Belə ki, 1952-ci il inqilabı, 1953-cü ildə Misirin respublika elan edilməsi, start verilən köklü islahatlar, ingilislərin ölkədən çıxarılması üçün aparılan milli-azadlıq hərəkatı, eləcə də ard-arda İsraillə müharibələr, fəsadları və s. həyatın bütün sahələrində olduğu kimi, ədəbiyyatdan da yan keçə bilməzdi.

Bununla belə, bu ədəbi cərəyanın təmsilçiləri yeni, demokratik, itirilmiş tarixi qüdrətini bərpa edən Misir arzusundan vaz keçmirdilər. Janrından, mövzusundan, forma və məzmunundan asılı olmayaraq əksər əsərlərdə ərəblərin kölə deyil, tarixi fəthlərlə zəngin cəsur, bəşər sivilizasiyasına töhvələr vermiş mütərəqqipərvər olmaları vurğulanırdı.

"Yeni dalğa" ədəbiyyatının daha bir xarakterik cəhəti - Misirin hakimiyyət dairələrində bir-birini sürəkli əvəzləyən proseslərin doğurduğu acı nəticələrin, xarici və daxili siyasi kursun fəsadlarının, sosial-iqtisadi islahatların və cəmiyyətdəki problemlərin çox vaxt acı yumor vasitəsilə və kinayəli tonda çatdırılması idi.

Dövrünün sosial-məişət problemlərini, siyasi bəlalarını sərbəst çərçivələrdə, bütün çılpaqlığı ilə xalqa aydın tərzdə, dildə ifadə etmək, ictimailəşən və kütləviləşən fikirləri, baxışları, tələbləri ədəbiyyata gətimək kimi xüsusiyyətləri özündə birləşdirən bu cərəyanın parlaq təmsilçiləri arasında Yusuf Əş-Şaruni, Yusuf İdris, Süleyman Fayad, Camal əl-Qitani, Yahya Tahir Abdulla, Bahə Tahir, Sanallah İbrahim və b. adlarını çəkmək olar. Məhz onların özünəməxsus yaradıcılıqları Misir ədəbiyyatı tarixində fərqli inkişaf mərhələsi açmış, yeni ədəbi məktəbin bünövrəsini qoymuşdur.

Açar sözlər: "yeni dalğa", Misir, ərəb ədəbiyyatı, Misir ədəbiyyatı

DIGITAL COINS AND CRYPTO COINS AS A TYPE OF DIGITAL CURRENCY

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Abstract

When it comes to investment tools, many alternatives come to mind where we can evaluate savings. Today, these alternatives are developing and changing in parallel with the development of technology. In addition to gold, which is one of the investment instruments with the highest transaction volume in the market, "Cryptocurrencies", which we have been hearing frequently in recent years, appear as the last link of this development and change. “Bitcoin”, which emerged in 2008 and started to be used in commerce over the internet, has been a pioneering currency in this field. Although the name of Bitcoin has caused great controversy in terms of the risks it contains and the difficulties in its application since it was first heard, its place in the market is growing day by day. Today, there are many studies on the concept of crypto money, which was first heard in Turkey in 2013. It is in great demand because it opens doors of high income and is a new and interesting concept. Although it is seen as risky by many economists, the share of cryptocurrencies in the world economy is increasing day by day. According to the reviews, in January-2022, the market value of cryptocurrencies increased to $ 2 trillion. 40% of the cryptocurrency market consists of Bitcoin, followed by Ethereum with 19% and Ripple with 2%. On the other hand, the value of Bitcoin is 43000 dollars, Ethereum is 3300 dollars and Ripple is 0.77 dollars.

Keywords: Digital Currency, Crypto Currency, Bitcoin

DİJİTAL PARALAR VE DİJİTAL PARA TÜRÜ OLARAK KRİPTO PARALAR

Özet

Yatırım araçları denince birikimleri değerlendirebileceğimiz birçok alternatif akla gelmektedir. Günümüzde bu alternatifler teknolojinin gelişmesiyle paralel olarak gelişmekte ve değişim göstermektedir. Piyasada işlem hacmi en yüksek yatırım araçlarından olan altının yanı sıra son yıllarda adını sıkça duymaya başladığımız “Kripto Paralar” bu gelişim ve değişimin son halkası olarak karşımıza çıkmaktadır. 2008 yılında ortaya çıkan ve internet üzerinden yapılan ticarette kullanılmaya başlayan “Bitcoin” ise bu alana öncülük eden bir para birimi olmuştur. Bitcoin adı ilk duyulduğundan bu yana içerdiği risk ve uygulamasındaki zorluklar bakımından büyük tartışmalara yol açmış olsa da her geçen gün piyasadaki yeri daha da büyümektedir. Türkiye’de ilk kez 2013 yılında duyulan kripto para kavramı üzerine günümüzde birçok çalışma yapılmaktadır. Hem yüksek kazanç kapıları açtığı, hem de yeni ve

ilgi çekici bir kavram olduğu için büyük bir talep görmektedir. Birçok ekonomist tarafından riskli görülmekle birlikte kripto paraların dünya ekonomisindeki payı her geçen gün artmaktadır. Yapılan incelemelere göre, Ocak-2022'de kripto para birimlerinin piyasa değeri 2 trilyon dolara çıkmıştır. Kripto para piyasasının 40'ı Bitcoin'den oluşurken, bunu %19 ile Ethereum ve %2 ile Ripple takip etmektedir. Diğer taraftan Bitcoin'in değeri 43000 dolar, Ethereum'un 3300 dolar ve Ripple'nin ise 0,77 dolar düzeylerindedir.

Anahtar Kelimeler: Dijital Para; Kripto Para, Bitcoin

INTRODUCTION

Today, due to the fact that financial markets have a global structure that exceeds the borders of the country, it has become a large market in which investors who want to make the best use of their resources by investing. The growth of financial markets and the fact that they play an active role in the economy, as well as the fact that there are investors who earn huge returns by investing in line with rational decisions, have recently begun to change the investment habits of individual investors. Just a few years ago, the thought that digital banking would enter our lives, that there would be no need to go to the bank to pay the bills, that the movements on the investment instruments could be followed closely, and that these transactions could be done with a single click on the phone, stunned everyone. After getting used to the digitalization situation in bank transactions and payments, we have to understand the appearance of the digital currency, which is a new phenomenon, and bring it into our lives. After the 2008 global crisis, the digital finance system emerged as a result of the loss of confidence in the financial markets of the states and its popularity has gradually increased. The digital currencies that serve the digital finance system and emerge as a product of intangible and intangible cryptology are called "crypto money". The most popular type of crypto currency is "bitcoin", which was developed by a person or a group of people in 2009 under the pseudonym "Satoshi Nakamoto" (Nakamoto, 2008).

In the process after the emergence of Bitcoin, especially in recent years, with the increasing interest of individuals and institutions in cryptocurrencies, there have been great developments in terms of academic and business world. In the light of these developments, investors who use and plan to use crypto money have started to be more interested in the movements of crypto money in the market. They tried to determine the action for the next investment by following the movements of the crypto money. At this point, this study is to analyze the effect of crypto money on economies as a type of digital money, based on digital currencies.

When the relevant literature is examined, the crypto money ecosystem, which can be considered as a developing field, is academically examined in terms of technical, economics, law, politics, finance, accounting and other dimensions (Holub and Johnson, 2018). There have been studies examining the use of cryptocurrencies as an alternative investment tool, especially in developing countries (Bouri et al., 2017; Selmi et al., 2018; Shahzad et al., 2019). In developed countries, the interest in cryptocurrencies increases when restrictions or uncertainties increase. The most well-known crypto currency is Bitcoin. Numerous studies have begun to examine the relationship of Bitcoin with different investment instruments (Luther and Salter, 2017; Wu et al., 2019; Çoban et al., 2021).

In this study, it is aimed to analyze the crypto money system as a type of digital money that is expected to increase in use today and in the future. In this context, the concept of digital

money will be discussed primarily. Then, cryptocurrencies as a type of digital money will be examined and the effects of cryptocurrencies will be discussed.

DIGITAL MONEY AND VIRTUAL MONEY

Money is defined as a payment instrument printed by the state, consisting of paper or metal with a written value on it. While money is used in the exchange of two goods, in the purchase of a new one, it also acts as an investment tool. With the change in the understanding of trade throughout human history, different exchange methods and different payment methods have been developed. The main factor of these methods was money. The concept of money has changed and developed over the years, starting from precious metals such as gold and silver, and over time, it has left its place to valuable papers and today, with the development of the virtual world, digital currencies. The concept of digital currency first emerged in the Netherlands in the late 1980s. In this period, truck drivers who bought fuel from gas stations in the Netherlands were able to purchase gasoline with the money they loaded on their smart cards in order to be protected from theft events that could occur there (Griffith, 2014).

Digital currencies are money that can be both stored and transferred electronically. These coins in our bank account have the characteristics of paper money. Today, with the development of banks and electronic environment, the use of physical money has decreased and there is not much difference between digital money and physical money (Wagner, 2014). Digital currencies have all the structural features of physical currency. It allows instant transactions for cross-border payments when connected to devices and networks that support their transactions. For example, a Turkish citizen can pay a person residing in the United States in digital currency. However, both must be connected to the same network in order to transact in the digital currency.

There are many advantages that digital currencies offer. Payments in digital currencies are usually instant and low cost as they are made directly between the transacting parties without the need for any intermediaries. This happens at a more affordable fee than other traditional payment methods involving banks or clearinghouses. In addition, digital currency-based electronic transactions also bring the necessary record keeping and transparency, as in other traditional payment methods. Digital currencies are discussed under two headings as virtual money and crypto money.

There are many definitions of virtual money in the literature. According to the definition of the European Central Bank, virtual money; It is “an unregulated/unregulated digital currency that is adopted and used by limited virtual group members, usually controlled by its developers” (ECB, 2015). The European parliament, on the other hand, defined virtual money as “the instruments that can be stored electronically or magnetically or are issued in exchange for money, expressing the debt of the issuer, taken for payment and accepted by real and legal persons other than electronic money institutions” (Sarıkatipoğlu et al. 2015). Virtual currencies are a method of shopping used in the digital environment. At this point, it is seen that there are more than one definition of virtual money. The most important common point of these definitions is that virtual money is not officially regulated.

There are generally two main ways to acquire virtual currencies. In the first of these ways, virtual money can be bought with real money at the rates determined. The second way used to obtain virtual money is to increase the electronic money savings of virtual currency users through special activities. At this point, virtual currencies can be grouped into three groups as closed system virtual currencies, virtual currencies with one-way flow and virtual currencies with two-way flow (ECB, 2015).

There are many different classifications of virtual currencies. In the report published by the International Monetary Fund (IMF), assets that represent a value digitally are called digital currency. Digital currencies include fiat and virtual currencies. E-money and Paypal are examples of digital currencies defined in fiat currency. Those that are not defined in fiat currency are called virtual currencies (SPB). There are two types of SPBs, which can be converted according to their connection with the outside world, and those that cannot be converted, such as online game currency. Convertible currencies include centralized and decentralized currencies. Decentralized ones that use cryptography as a verification system are also called cryptocurrencies (IMF, 2016).

CRYPTO AS A DIGITAL CURRENCY

Cryptocurrency is seen as one of the greatest inventions of modern world technology. Cryptocurrencies, the biggest technology of the last decade, have become very popular in a short time. Cryptocurrency, whose main purpose is exchange, represents a digital asset. Everything newly created is controlled by its own system, and cryptocurrencies use their own system, cryptography, to secure all transactions.

Cryptocurrencies are defined as virtual currencies in which secure transactions are made in encrypted form. Angel (2015) defined crypto money as a digital currency based on account asymmetric encryption and the use of different cryptographic protection methods. According to the definition of Gervais (2014), it is an innovative payment network that operates without a central controlling authority or bank. According to another definition, crypto money is a special electronic money based on a decentralized regulation and circulation mechanism, with a complex system of information and technological procedures working with a cryptographic method of operation.

The theoretical infrastructure of cryptocurrencies was laid by Wei Dai in 1998, and the technical infrastructure was laid by a person named Satoshi Nakamoto in 2008. After the 2008 financial crisis, pressure started to occur on central currencies. As a result of the crisis, people's trust in financial institutions has decreased. Seeing this shortcoming of the system, cryptocurrency creators created decentralized digital currencies. These digital currencies can be transferred to other users and used for buying and selling goods and services. Cryptocurrency has become an alternative to credit cards due to its low transaction costs (Morisse, 2015).

TYPES OF CRYPTO CURRENCY

It is possible to say that cryptocurrency is a subset of digital currencies. The first cryptocurrency was Bitcoin, created in 2009. After Bitcoin, many cryptocurrencies have emerged in the market, but these other cryptocurrencies created are called altcoins because they represent a mix of Bitcoin alternatives (Nakamoto, 2008).

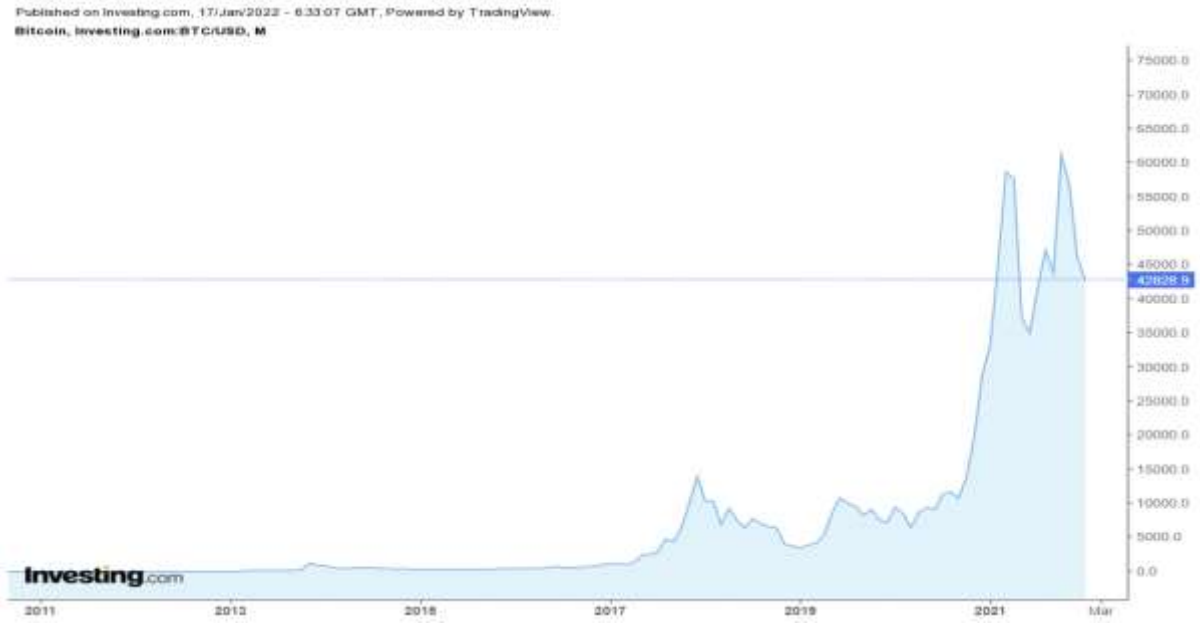
There are many reasons to invest in cryptocurrencies. The instability in digital currencies creates both a great opportunity to make a profit, and it also poses a great risk for investment. Although many cryptocurrencies have been traded in the markets in recent years, the number of cryptocurrencies used by users is quite limited. In January 2022, the market capitalization of cryptocurrencies reached $2 trillion billion. While 40 percent of the said market consists of Bitcoin, it is followed by Ethereum with 19% and Ripple with 2% (Investing, 2022).

Bitcoin

Bitcoin is the most important and most popular among cryptocurrencies. Cryptocurrencies such as Bitcoin are a new digital currency system based on computer cryptography and built on decentralized network architecture. By another definition, Bitcoin is a digital currency that provides a secure and cost-effective platform for electronic payments. The large volume of Bitcoin in the markets and the rapid growth of its network have attracted the attention of governments. Some governments have even taken steps to ban their citizens from trading with Bitcoin.

The change of Bitcoin against USD over the years is shown in Figure-1.

Fig. 1: Bitcoin's USD Rate by Years



Source: Investing, 2022.

According to Figure-1, while the value of Bitcoin was around 2500 dollars in 2011, it increased to 61000 dollars in 2021. The value of Bitcoin, which was exposed to serious fluctuations in the last periods of 2021 and in the first month of 2022, decreased to 43000 dollars as of January 17, 2022.

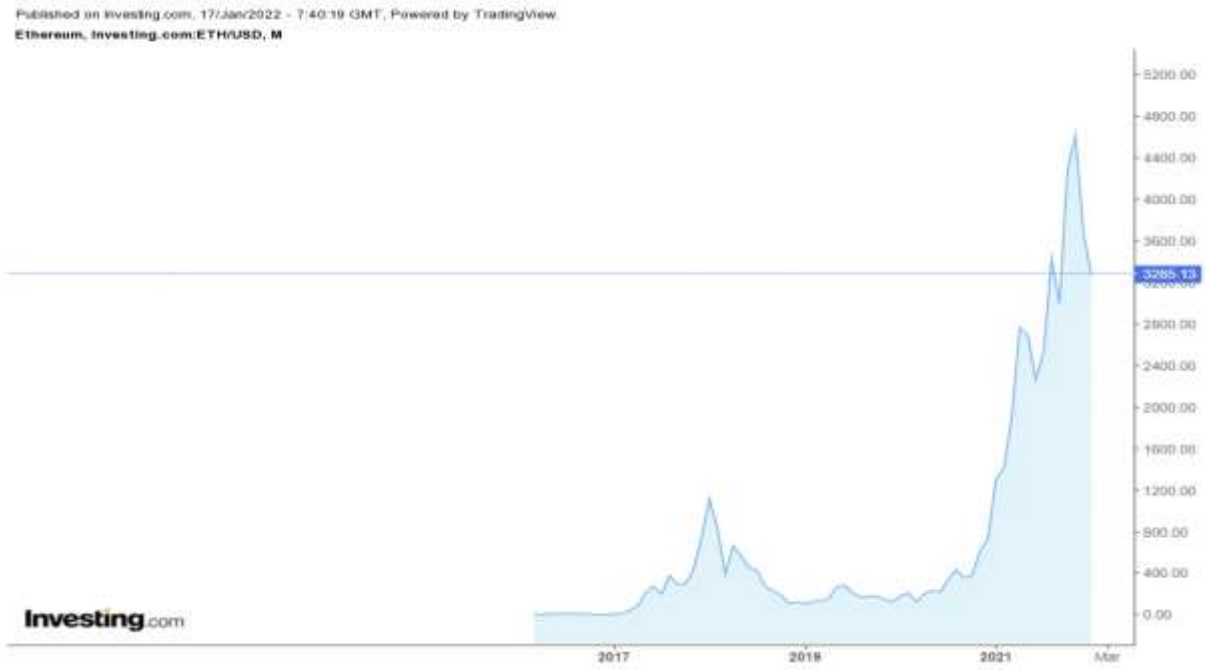
Ethereum

Developed by the Switzerland-based Ethereum Foundation, Ethereum is a decentralized platform that runs smart contracts and uses the Turing-Complete programming language. Activities on this platform; It is programmed to operate uninterruptedly, without allowing tightly controlled fraud or third-party interference. Officially launched in 2015, Ethereum enjoys great popularity among many developers and company owners.

Although Ethereum may seem like an altcoin, it is a digital currency due to its many different features. This virtual currency, which is planned based on the idea of Bitcoin, uses a more advanced system than Bitcoin, with many different features than Bitcoin. In addition, Ethereum's verification process was created with a different algorithm. In this algorithm, the transaction time is intended to be faster than Bitcoin. In terms of development, Ethereum supports developers, while exchange in Bitcoin is more limited. The nature of this cryptocurrency uses unreliable smart contracts and provides a suitable environment for applications that facilitate coordinated group actions in a network. It ranks second among cryptocurrencies in terms of market share after Bitcoin.

Figure-2 shows the change in Ethereum against the dollar.

Fig. 2: Ethereum's USD Rate by Years



Source: Investing, 2022.

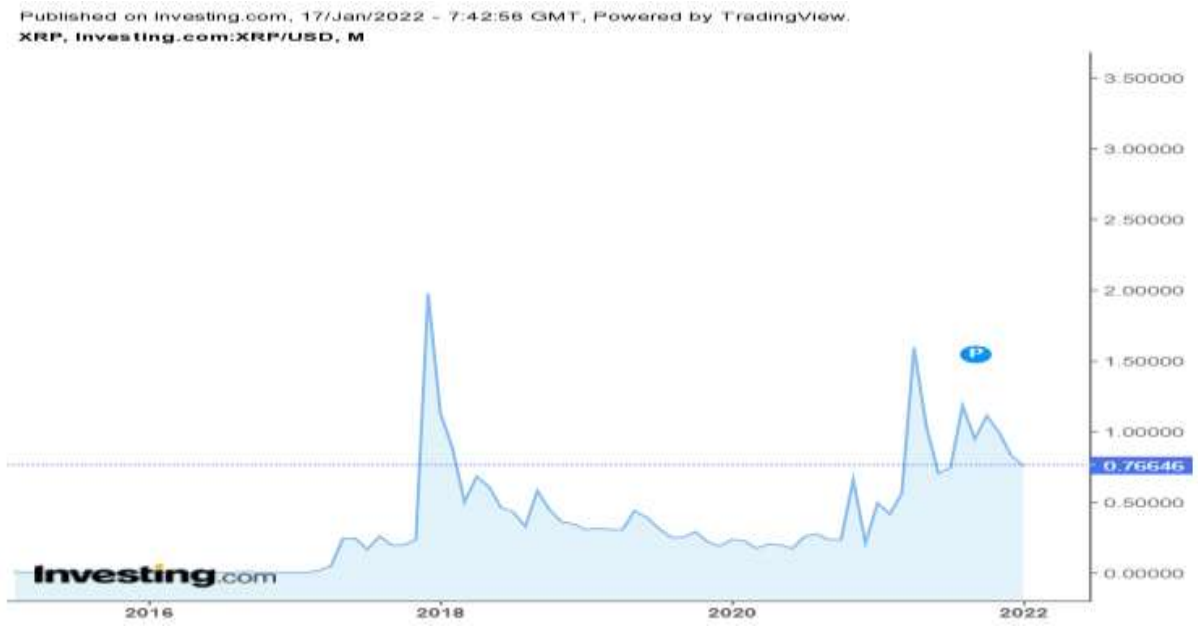
According to Figure-2, while the value of Ethereum against the dollar was 100 dollars in 2017, it increased to 1000 dollars in 2018. The value of Ethereum, which entered a downward trend until 2021, rose to the level of 4700 dollars in 2021. The value of this crypto money, which has been in a downward trend recently, is around 3300 dollars as of January-2020.

Ripple

Ripple (XRP) was launched in 2012. Unlike other Bitcoin-based cryptocurrencies, Ripple does not use Blockchain technology. In this respect, Ripple is almost completely independent from Bitcoin. With Ripple, you can process up to 1500 transactions per second and payments can be made at a very high speed (4 seconds). Ripple is preferred by large banks and other institutional actors providing financial services. Ripple prevents virtual attacks by acting as a bridge between rarely traded currencies. Ripple is the third largest cryptocurrency on the market. Although Ripple's initial course was lower than other cryptocurrencies, it achieved a rapid rise in 2017. Thanks to this increase, its founder Chris Larsen has become the 14th richest person in the world. With the company's rapid progress, Larsen earned $14 billion from this increase. Ripple's main purpose is to facilitate payments between banks and customers. Ripple has a lower transaction cost than Bitcoin at $0.0011 per transaction. Transferred funds arrive on the other side within 5 to 10 seconds (Kesebir and Çağdaşer, 2019: 616).

The change of Ripple against the dollar is summarized in Figure-3.

Fig. 3: Ripple's USD Rate by Years



Source: Investing, 2022.

According to Figure-3, the value of Ripple, which was 0.2 dollars in 2016, increased to 2 dollars in 2018. Testing the levels of $ 1.6 in 2021, the value of Ripple was realized at the level of $ 0.77 in January 2022, while its market value increased to $ 36 billion.

The modern Ripple network can manage not only digital assets or cryptocurrencies, but also any asset, including precious metals or parcels. The database used in Ripple is called notebook. In this data system, all account holders have balance and credit limits.

CONCLUSION

Cryptocurrency is a digital currency based on an open source cryptographic techniques that is not tied to a "central bank" (decentralized) or a physical token or paper, but represented by a blockchain data structure. Bitcoin is the world's first digital currency invented to compete with central banks. At this point, Bitcoin has become the first digital payment tool that brings a new breath to the markets. Bitcoin is not only a payment tool, but also used as an investment tool. In this study, cryptocurrencies as a type of digital money were examined based on digital currencies. Among the cryptocurrencies, the ones that attract the most attention are Bitcoin, Ethereum and Ripple.

In January-2022, the market capitalization of cryptocurrencies increased to $2 trillion billion. 40% of the market in question consists of Bitcoin, followed by Ethereum with 19% and Ripple with 2%. Bitcoin is the most important and most popular among cryptocurrencies. While the value of Bitcoin was around $2500 in 2011, it rose to $61000 in 2021. The value of Bitcoin, which has been subject to serious fluctuations in the last periods of 2021 and in the first month of 2022, is at the level of 43000 dollars as of January-2022.

Officially launched in 2015, Ethereum's value against the dollar was $100 in 2017, but rose to $1,000 in 2018. The value of Ethereum, which entered a downward trend until 2021, rose to the level of 4700 dollars in 2021. The value of this crypto money, which has been in a downward trend recently, is around 3300 dollars as of January-2020. Launched in 2012, Ripple (XRP) does not use Blockchain technology, unlike other Bitcoin-based cryptocurrencies. In this respect, Ripple is almost completely independent from Bitcoin.

Although Ripple's initial course was lower than other cryptocurrencies, it achieved a rapid rise in 2017. Thanks to this increase, its founder Chris Larsen has become the 14th richest person in the world. Ripple's value, which was $ 0.2 in 2016, stood at $ 0.77 in January 2022, while its market value increased to $ 36 billion.

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LOGISTICS SECTOR AND DRONE TRANSPORTATION: SUCCESSFUL IMPLEMENTATION EXAMPLES IN TURKEY AND IN THE WORLD

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Abstract

In this study, it is aimed to deal with the application examples in the world and in Turkey, based on the advantages and disadvantages of drone transportation. Drones, which were used for military purposes in the First and Second World Wars, have been used for commercial purposes since the 2000s. Currently, drones have started to play important roles in many sectors, especially in the logistics sector. Depending on technological changes and developments, it is predicted that drones will create innovative and applicable business solutions in the near future. In this context, commercial companies such as DHL, UPS and Alibaba, especially Amazon, have started to benefit from drones in their own applications. In Turkey, it is stated that MNG and Aras Kargo companies are working in R&D centers to use drones in the last step of delivery. Depending on the use of drones in the logistics sector, it is predicted that company costs will decrease, access areas will expand and delivery times will shorten. In addition, with the increase in smart city and logistics applications, it is expected that the interest in drone transportation will continue to increase.

Keywords: Drone Transportation, Logistics, Turkey

LOJİSTİK SEKTÖRÜ VE DRONE TAŞIMACILIĞI: TÜRKİYE'DE VE DÜNYADA BAŞARILI UYGULAMA ÖRNEKLERİ

Özet

Bu çalışma da hali hazırda drone taşımacılığının avantaj ve dezavantajlarından hareketle Dünya'da ve Türkiye'deki uygulama örneklerinin ele alınması amaçlanmıştır. Birinci ve ikinci Dünya savaşlarında askeri amaçlarla kullanılan dronlardan 2000'li yıllardan itibaren ticari amaçlarla yararlanılmaya başlanmıştır. Hali hazırda dronlar başta lojistik sektörü olmak üzere birçok sektörde önemli roller üstlenmeye başlamıştır. Teknolojik değişme ve gelişmelere bağlı olarak dronların yakın gelecekte yenilikçi ve uygulanabilir iş çözümleri ortaya çıkaracağı öngörülmektedir. Bu bağlamda Dünya özelinde başta Amazon olmak üzere DHL, UPS ve Alibaba gibi ticari şirketler kendi uygulamalarında dronlardan yararlanmaya başlamışlardır. Türkiye özelinde ise MNG ve Aras Kargo şirketlerinin son adım teslimatta drone kullanmak için AR-GE merkezlerinde çalışmalar yaptığı ifade edilmektedir. Lojistik sektöründe drone kullanımına bağlı olarak firma maliyetlerinin azalması, erişim alanlarının

genişlemesi ve teslimat sürelerinin kısalacağı öngörülmektedir. Ayrıca akıllı şehir ve lojistik uygulamalarının artmasıyla birlikte drone taşımacılığına olan ilginin artarak devam etmesi beklenmektedir.

Anahtar Kelimeler: Drone Taşımacılığı, Lojistik, Türkiye

INTRODUCTION

Delivery is one of the most important steps in the logistics industry. At the same time, it is one of the steps where problems arise, the cost is high, customer satisfaction is at the forefront and the timing should be in accordance with the planned flow. Today, many means of transportation are used for delivery. Land vehicles, trains, ships, airplanes, as well as drones, which are increasingly common unmanned aerial vehicles, are used. With the developments in the aviation sector and the development of technology, many new products have emerged in this sector. Firstly, unmanned aerial vehicles emerged because countries cared about military air defense. Countries invest a lot in this field. With the use of drones in civil aviation activities, an industry in its field has emerged.

Today, in addition to military activities, unmanned aerial vehicles are used in the cartography industry, photography industry, rescue and aid works, extinguishing forest fires, agriculture, media, providing security, and logistics at the same time. Unmanned aerial vehicles (UAV) are small aircraft in terms of dimensions and weights, which can fly in accordance with a flight plan uploaded by remote control or pre-flight, without a human to control or travel within the unit. The International Civil Aviation Organization (ICAO) classifies unmanned aerial vehicles in two separate categories as military and civilian. According to this; military UAVs used for purposes such as reconnaissance and attack; UAVs used for scientific, imaging or hobby purposes are considered civilian. The name "drone" given to remotely control aerial vehicles used in the international literature, later on, with the increase in the use of civil unmanned aerial vehicles, has started to be called "Unmanned Aerial Vehicle (UAV)". However, smaller UAVs (under 500 gr) are called drones (ICAO, 2011; SHGM, 2019).

Rapid technological developments in autonomous unmanned aerial vehicles, called unmanned aerial vehicles or drones, enable large-scale applications of products in last-mile delivery. The use of drones, especially in the logistics sector, significantly reduces company costs, especially reducing labor costs. Today, online retailers and distribution companies such as Amazon have started different searches and important investments in the use of drone technology in the last mile delivery processes.

The Covid-19 epidemic, which started in the last months of 2019, has led to the re-examination of all processes in the logistics sector as well as in other sectors. In this context, in addition to the curfews, changes have started in the behavior of customers/consumers in order to reduce the risk of transmission of the virus. While the aforementioned process has led consumers to online shopping, it has also forced companies to seek new ways to deliver their orders. In the logistics sector, it is important that the delivery is delivered to the customer without any problems, as well as fast and timely delivery. In this context, recently, the issue of delivery with drone transportation has been discussed intensively. The aim of this study is to deal with the effects of drone transportation in the logistics sector, based on the examples of Turkey and the world. In this context, primarily the historical development of unmanned aerial vehicles is emphasized. Then drone types were discussed and finally successful examples of drone applications in the logistics sector were explained.

HISTORY OF UNMANNED AERIAL VEHICLES

The historical past of remote-controlled aircraft is quite old. On August 22, 1849, the Austrians' sending 200 pilotless balloons containing time-sealed bombs to the city of Venice (Italy) is considered to be the first use of UAVs in an air attack. It is also stated that while some of these bombed balloons exploded on the targets, some of them returned with the effect of the wind and exploded in the Austrian lines. On the other hand, the military use of unmanned balloons dates back to 1793 in the United States, and these balloons were only used for reconnaissance purposes in the civil war. It is recorded that in 1908, about 10 German balloons carrying more than 25 airmen, at least half of whom were German, crossed the French border and landed in France. Under the influence of all these events, the Paris Conference was organized in 1910. Although concrete steps could not be taken, the conference went down in history as it was the first diplomatic effort to regulate air law on an international platform (Kahveci and Can, 2017).

The first unmanned aircraft (Ruston Proctor Aerial Target) was designed at the end of the First World War (1916), and the first unmanned use was carried out with the "Hewitt-Sperry" gyro-controlled automatic aircraft, known as "flying bombs". Later, in November 1917, the "automatic flying aircraft" became the official aircraft of the US Armed Forces, it made its first flight in 1918, but it was not possible to use it in the First World War. The DH.82B Queen Bee, one of the radio-controlled aircraft models developed by the British during the Second World War, is thought to have inspired the term "drone". The word drone used today is derived from this prototype (Garcia and Santoso, 2019; Nakiboğlu, 2020).

The historical development and future predictions of drones in the literature are summarized with the help of Figure-1.

Fig. 4: Historical Development and Future of Drones

Source: Garcia ve Santoso, 2019: 12; Nakiboğlu, 2020.



According to Figure-1, drones, which were used for military purposes from the 1930s to the 2000s, have also been used in commercial areas since the 2000s. In the near future, a new commercial market has emerged for drones that started for military use since the 2000s, and drone technology has become accessible to almost everyone (Garcia and Santoso, 2019).

TYPES OF DRONES

Currently used UAVs are referred to as multi-rotor systems. The ones with 4 motors are called quadcopters and the ones with 8 motors are called octocopters. And each engine has the ability to carry loads depending on its lifting power. The technology used in the engines, as well as the production of the body from light material, as well as the high amount of lines and (geometric pitch) of the propellers, directly affect the lifting force in the drones and the amount of load it will carry. The last step in logistics is the amount of cargo that drones will carry in delivery.

In the literature, drones are classified according to the number of engines or their weight. Types of drones according to the number of engines are shown in Table-1, and drones according to their weights are shown in Table-2.

Table. 1: Types of Drones by Number of Engines

Tricopter	Drone with three engines. Its configuration is usually 'Y' shaped. Sample; YI Erida Tricopter Drone, TX Tricopter.
Quadcopter	Four-engine drone. Their configuration is '+' or 'X'. Sample; DJI Mavic, DJI Phantom, Parrot Mambo.
Heksacopter	Drone with six engines. Sample; Goolsky L100, DJI Matrice, Yuneec TYPHON.
Octocopter	Drone with eight engines. Sample; Intel Falcon, DJI Agras.
Multicopter	Drones with multiple engines.

Source: Dronlog, 2022.

Among the classes in Table-1, the most used ones are the drones with 4 engines, which we call quadcopter or quadrotor. According to the positioning of the engines, quadcopters are divided into two: quadcopters with '+' engines positioned and quadcopters with 'X' shaped engines positioned.

In Turkey and in many countries, drones are classified according to their weight and according to this classification; the necessary certifications in our country are made in accordance with the SHT-UAV instruction, which is the drone instruction of the General Directorate of Civil Aviation (SHGM). In the SHT-UAV instruction, drones are classified in 4 categories according to their weight, as seen in the table 2.

Table. 2: Types of Drones by Flight Weight

Category	Flight Weight
UAV-0	500 gr – 4 kg
UAV -1	4 kg – 25 kg
UAV -2	25 kg – 150 kg
UAV -3	150 kg and+

Source: Dronlog, 2022.

According to the unmanned aerial vehicle systems instruction published by Civil Aviation, it is not necessary to register drones under 500 gr. It is obligatory to register drones weighing over 500 gr. It is obligatory to get a certificate by participating in certificate trainings.

SUCCESSFUL DRONE APPLICATIONS IN THE LOGISTICS SECTOR

Companies always want to use the most cost-effective in logistics distribution. Traditionally they have used trucks to overcome this. However, drones, which are small unmanned aerial vehicles that we have encountered recently, have revealed a new distribution method. These systems are autonomous to perform package delivery. If we evaluate the advantages of using the drone delivery system, the following conclusions emerge. Since there are no people,

namely pilots, the cost is reduced. Distances get shorter as it moves along a straight line. At the same time, there is no such thing as a traffic jam. It is faster than trucks and uses less power per kilometer. In line with these advantages, fast delivery also increases customer satisfaction. Based on these advantages, companies conduct studies and research on the use of UAVs. Of course, there are some disadvantages. Since UAVs work with various batteries, they cannot travel long distances like trucks and cannot carry very large loads.

UAVs have been used in the logistics sector in the world and in Turkey to ensure the last step delivery. Many methods have been applied in the logistics sector. One of them was that the autonomous drone, which took off from a central warehouse, provided the package delivery to the customer in order to ensure the final step delivery. Here, the problem of the length of the distances and the premature depletion of the batteries was encountered. In a delivery with a different trial, a truck loaded with autonomous drones approaches the areas where the delivery will be made, and the last step is for delivery. However, in this application, the fuel cost of the truck and the distributor cost are encountered. In an application that was tried in a different way, buses that were already operated by a different company were used. Drones were placed on the buses and while the bus was going along the line, the delivery of the package to that district was ensured by drone. And it has been successfully implemented autonomously. During the delivery, the customer receives an audible notification and at the same time, the drone leaves the package it carries with the help of an autonomously controlled servo arm in the garden or roof of the customer's house.

From a practical point of view, Amazon CEO Jeff Bezos has produced remarkable events since 2013. Amazon announced drone delivery in 2013, calling it a "big surprise". Google launched the drone delivery project called Wing. After that, Amazon announced and implemented a similar Amazon project called Amazon Air Play in 2016, that it would deliver the last step by drone within 30 minutes. They have tested drone delivery at other companies around the world. DHL delivered less than 1 kg of medicine with parcelcopter. In 2019, Amazon developed it further and made the drone to detect animals and people and make sudden maneuvers using nvidia artificial intelligence cards. Alibaba and Shanghai YTO Express delivered 450 teas to customers in the city in China. SF Express provided delivery service in China with Xaircraft drones. FPS distribution has completed its first commercial delivery using a drone in Sheffield. Domino's delivered pizza by drone for the first time in the world in New Zealand. JD has set up four drone bases in the remote areas of Beijing, Jiangsu, Shaanxi and Sichuan, enabling the people there to attend China's largest sales festival. Amazon made its first delivery by drone in the UK in 2016. Iceland's largest online sales site, AHA, has partnered with Flytrex for drone delivery. Australia Post successfully tested the drones in April 2016. For players gathered on the golf course, in May 2016, Rakuten, a Japanese company, launched a service called Sora Kaku, which offers products such as golf equipment, snacks and beverages. Matternet, a California-based entrepreneur, has been delivering medical supplies and blood samples by drone in many countries since 2011. According to the research, it is more cost-effective to provide delivery using a drone rather than sending a blood sample in a 2-ton vehicle. In 2017, Rakuten started to provide drone delivery service in Minamisoma. Silicon Valley started to use pharmaceutical transportation in Rwanda in 2016 under the name of Zipline International. PTT has started work for drone delivery in Turkey. At the same time, MNG and Aras cargo companies have started to work in R&D centers to use drones in the last step of delivery (Kahveci and Can, 2017; UTIKAD, 2017; Cleanroom, 2017; Garcia and Santoso, 2019; Aurambout et al., 2019; Nakiboğlu, 2020; Kargo Takip, 2022). In the researches, it is predicted that depending on the use of drones in the logistics sector, the company's costs will decrease, the access areas will improve and the delivery times will be shortened.

Recently, different drone prototypes have been working on reaching long distances via drones. In this context, we are working on prototypes that can travel long distances and can also take off and land vertically, which is not needed on the runway. This prototype is called V-tol UAV. Autonomous unmanned aerial vehicles in the fixed wing category can also turn into copter mode. Because it has a fixed wing, it can travel longer distances and carry more loads..

The use of drones in the logistics sector has different disadvantages compared to traditional transportation types. First of all, the fact that it cannot carry large loads, does not have enough battery life to go long distances, and it can be a source of frightening and stress for animals in nature due to the high amount of sound. Apart from these, there are also government policies on people, on public buildings, near airports and where night flights are prohibited. It is forbidden to fly outside the certain height and speed limit, which varies according to the countries. In the protection of personal privacy, some security problems may arise due to the fact that too many photos and videos are taken.

CONCLUSION

Rapid technological developments in autonomous unmanned aerial vehicles, called unmanned aerial vehicles or drones, enable large-scale applications of products in last-mile delivery. The use of drones, especially in the logistics sector, significantly reduces company costs, especially reducing labor costs. Today, online retailers and distribution companies such as Amazon have started different searches and important investments in the use of drone technology in the last mile delivery processes. The aim of this study is to deal with the effects of drone transportation in the logistics sector, based on the examples of Turkey and the world.

Drones, whose historical background dates back to the 1850s, have made significant progress in parallel with the developments in the aviation industry. Drones, which were used for military purposes in the First and Second World Wars, have been used for commercial purposes since the 2000s. Currently, drones have started to play important roles in many sectors, especially in the logistics sector. Depending on technological changes and developments, it is predicted that drones will create innovative and applicable business solutions in the near future. In this context, commercial companies such as Amazon, DHL, Alibaba, UPS, Google, Airbus, SF Express, Rakuten, aha-Fliytrex have started to use drones in their own applications. In Turkey, it is stated that MNG and Aras cargo companies are working in R&D centers to use drones in the last step of delivery.

It is expected that the use of drones in the final delivery in the logistics sector will reveal advantages in many different aspects. In this context, it is foreseen that the company's costs will decrease in the first place, the access areas will be improved and the delivery times will be shortened. In addition, with the increase in smart city and logistics applications, it is expected that the interest in drone transportation will continue to increase. Accordingly, it can be stated that drone transportation will be an important type of transportation in the future.

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THE TALE OF AN INTERNAL JOURNEY FROM CONFESSION TO PURIFICATION: SAMUEL TAYLOR COLERIDGE, "The Rime of The Old Mariner"

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Abstract

Samuel Taylor Coleridge's poem "The Rime of Ancient Mariner" is one of the most groundbreaking sea poems in British and world literature. It tells the dramatic tale of the rescue of an elderly sailor and his crew, guided by an albatross landing on deck, in a life-or-death struggle lost in storm, snow and ice at the South Pole.

However, the fortune line of the Ancient Mariner and crew changes dramatically in an unexpected manner. After the Albatross showed the sailors the way of salvation by guiding them, the Ancient Mariner drew out his arrow and shot the bird, which was standing on the deck mast, suddenly in the chest. The poor bird falls before them like a branch. Everyone is astonished, although, the bird did them a great favor. The crew blame the Ancient Mariner and hang the albatross' corpse on his neck as a symbol of shame for his sin.

In the poem, it is conveyed in a high poetic style, in which imagination and truth are intertwined, how terrifying the killing of an innocent creature has led to. The whole poem expresses the reflection of the eternal conflict between the real and the extraordinary, rationality and imagination, as well as between good and evil. The Ancient Mariner killed a life unjustly, violating religious and human values such as hospitality, innocence, appreciation, morality and friendship, which even an ignorant person would not fail to respect. The Ancient Mariner must pay the price for this unexpected immoral weakness of character that undermines human dignity.

First of all, there is a great famine and epidemic on the ship. So much so that there is not even a drop of water to drink in the oceans. The crew blame the Ancient Mariner for this disastrous situation. After great pain, suffering, and hardship, almost all of them die. Only the Old Sailor manages to go ashore. However, his entire being is filled with feelings of regret and remorse. He wants to cleanse his soul of this heavy burden by telling and confessing the great sin he has committed to the first person he meets.

This article aims to trace the spiritual growth journey of the Ancient Mariner from sin to confession, from narrating to purification, accompanied by the extraordinary adventure of the Ancient Mariner briefly mentioned in the lines above.

Key words: Coleridge, The need to speak, Confession, Purification, Spiritual growth

İTİRAFTAN ARINMAYA BİR İÇSEL YOLCULUK DESTANI: SAMUEL TAYLOR COLERİDGE, "YAŞLI GEMİCİ"

Özet

Samuel Taylor Coleridge'in "Yaşlı Gemici" adlı şiiri,[1] İngiliz ve dünya edebiyatının çığır açan en güzel deniz şiirlerinden birisidir. Güney kutbunda fırtına, kar ve buz dağları arasında yolunu kaybetmiş, ölüm-kalım mücadelesi veren yaşlı bir gemici ve tayfasının güverteye konan bir albatros tarafından yönlendirilerek kurtuluşlarının dramatik hikayesini anlatır.

Ne var ki, yaşlı gemicinin ve tayfaların baht çizgisi hiç beklenmeyen bir davranışla dramatik bir değişim gösterir. Albatrosun denizcilere rehberlik ederek kurtuluş yolunu göstermesinin ardından, Yaşlı Gemici okunu çıkarır ve güverte direğinde duran kuşu ansızın göğsünden vurur. Zavallı kuş bir külçe gibi önlerine düşer. Herkes şaşkınlık içindedir. Oysaki, kuş onlara büyük iyilik etmiştir. Tayfalar yaşlı gemiciyi suçlarlar ve işlediği günahın bir utanç simgesi olarak albatrosun ölüsünü boynuna asarlar.

Şiirde masum bir canlının yok yere öldürülmesinin ne denli dehşet verici sonuçlara yol açmış olduğu, hayal ve hakikatin iç içe geçtiği şiirsel ve yüksek bir şiir dili üslubuyla aktarılır. Tüm şiir, gerçek dünya ile olağanüstü dünyanın, rasyonellik ile hayalin, aynı zamanda iyi ile kötü arasındaki kadim çatışmanın yansıtılmasını dile getirir. 'yaşlı Gemici', cahil bir insanın bile hürmet etmekte kusur etmeyeceği tanrı misafirliği, masumiyet, kadirşinaslık, ahlak ve dostluk gibi dini ve insani değerleri ihlal ederek, haksız yere bir cana kıymıştır. Yaşlı Gemici, insan onurunu zedeleyen bu beklenmedik ahlak dışı karakter zafiyetinin bedelini ödemek zorundadır.

Öncelikle gemide büyük bir kıtlık ve salgın baş gösterir. Öyle ki, deryalar içinde içecek bir damla su bile bulunmaz. Tayfalar bu feci durumdan yaşlı gemiciyi sorumlu tutarlar. Büyük acı, ıstırap ve sıkıntılardan sonra hemen hepsi hayatını kaybeder. Karaya çıkmaya sadece yaşlı gemici muvaffak olur. Ancak, tüm benliği pişmanlık ve nedamet hisleriyle doludur. İşlediği büyük günahı rastladığı ilk insana anlatarak ve itiraf ederek, ruhunu bu ağır yükün vebalinden arındırmak istemektedir.

Bu bildirimiz, Yaşlı Gemici'nin yukarıdaki satırlarda kısaca değinilen olağanüstü macerası eşliğinde günahtan itirafa, anlatıdan arınmaya uzanan ruhsal büyüme yolculuğunun izlerini sürme maksadı taşımaktadır.

Anahtar kelimeler: *Coleridge, Anlatma ihtiyacı, İtiraf, Arınma, Ruhsal büyüme*

I. Giriş: İçsel Bir Yolculuk Destanı Olarak Yaşlı Gemici'ye Kısa Bir Bakış

İnsan varoluşunun temel taşlarından birisi hayatında dönüm noktası teşkil eden trajik olaylardır. Bu tür olaylar bir anlatının kahramanı vasıtasıyla okurlarda farklı etkiler uyandırabilir. Kahramanın yaşadıklarını aynalamak suretiyle okurlar da bir tür içsel yolculuğa çıkarak ruhlarını arındırırlar. Hiçbir insan, tecrübe ettiği suçsuz yere bir cana kıyma, intikam hırsı, iftira gibi büyük günahları uzun süre içinde tutamaz, bilinçaltının dehlizlerinde saklayamaz. Bu tür büyük acıları itiraf etmek, en azından birileriyle paylaşarak ruhunu yaralayıcı ağır bir yükten arındırmak ister. Bu çerçevede Samuel Taylor Coleridge'in Yaşlı Gemici başlıklı hikayesi suçsuz yere masum bir kuşu öldüren ihtiyar bir gemicinin pişmanlık ve ıstıraplar içinde yaşadığı olağanüstü manzum anlatıyı defalarca ve ısrarla anlatarak, arınma

[1] Şiirin Orijinal başlığı "The Rime of The Ancient Mariner"dir. Eserin İletişim Yayınları tarafından 2008 yılında Türkçeye aktarılan 1. Baskısı "Yaşlı Gemici" şeklinde tercüme edilmiştir. Makalemizde kaynak olarak söz konusu yayını kullandığımız için, biz de "Yaşlı Gemici" çevirisini esas aldık. Eserin tam tercümesi "Yaşlı Gemicinin Destanı" şeklinde olabilir.

macerasını ve içsel yolculuğunu konu eder. Söz konusu şiirin daha iyi anlaşılabilmesi için kısa bir özetini sunmanın yararlı olabileceğini değerlendiriyoruz.[2]

Yaşlı Gemici olağanüstü olaylara şahit olduğu macera dolu bir deniz seferinden dönmüştür. Neşe içinde arkadaşlarının düğününe giden delikanlılardan birinin yolunu kesip, başından geçenleri anlatmaya koyulur. Delikanlı tanımadığı bu ihtiyarı dinleyeceği yerde, müzik, dans ve eğlence dolu düğün törenine katılmak için sabırsızlanır. Ne var ki, Yaşlı Gemici onu ilkin elleriyle, sonra da "ışıldayan gözleriyle tutar". Bu gözlerdeki gizemli güce karşı koyamayan delikanlı, büyülenmişçesine onu dinlemek zorunda kalır. Hikâye şu şekilde gelişir:

Geminin yolculuğu, herhangi bir yolculuk gibi, kiliseli ve deniz fenerli bir limandan, sevinç ve umutla başlar. Bir müddet sonra gemi fırtınaya kapılarak Güney Kutbu'na doğru sürüklenir, doğa gittikçe garipleşir. Etrafı buzullar, sis ve kar basar. Her tarafı kaplayan bu buzların birbirlerine çarpmalarından karabasanları andıran korkunç sesler çıkar.

Buz buradaydı, buz oradaydı,
Bıuz her bir yandaydı;
Çalırdıyor, hırlıyor, gürlüyor, uluyordıı,
Baygınken dıuyıılan sesler gibi. (Urgan, 2008: 606)

Hiçbir canlı varlığın görülmediği bu buzlar diyarında, bir Albatros kuşu sisi yarıp gemiye konunca, gemiciler bir insan görmüşçesine sevinirler. Üstelik teknenin çevresinde uçup duran bu kuş onlara uğur getirmiş; her bir yanlarını saran buzların yarılmasını, güzel bir rüzgârın yelkenlerini doldurmasıyla kuzeye doğru gitmelerini ve nihayet Güney Kutbu'nun soğuğundan kurtulmalarını sağlamıştır. Yaşlı Gemici kendilerini bu girdaptan kurtaran zavallı kuşu ortada hiçbir sebep yokken yok yere okuyla vurur. Gemicinin bu zararsız, üstelik de uğurlu kuşu niçin öldürdüğü konusunda en küçük bir açıklama yapılmaz. Bunun bir nedeninden söz edilmiş olsa, gemicinin suçu hafifleyecek, daha anlaşılır ve kabul edilebilir bir günah işlemiş olacaktı. Ama saldırının nedensiz, dolayısıyla saçma oluşu, ruhbilimde *"acte gratuit"* denilen, boşuna, sebepsiz ve anlamsızca yapılan bir eylem sayılması, Albatros'un öldürülüşüne tam bir cinayet niteliği verir. Gemici bu cinayetten ötürü öyle korkunç bir cezaya uğrar ki, mantıklı düşünmeye kalkanlar, işlenen suçla çekilen ceza arasında bir oransızlık olduğunu düşünebilirler (Urgan,2008: 607).

Başlangıçta Albatrosu öldürdüğü için Yaşlı Gemici'yi ayıplayan tayfa, sisten kurtulup güneşli havaya kavuşunca, deniz adamlarına özgü o boş inançlardan birine kapılırlar; bu kuşun aslında uğur getirmediği, ortadan kaldırılmasının iyi olduğu kanısına varırlar. Böylece onlar da arkadaşlarının suçuna katılmışlardır ve cezalandırılacaklardır. Ama en ağır manevi cezayı asıl suçlu olan Yaşlı Gemici çekecektir.

Gemi Pasifik Okyanusu'na varınca, rüzgârın dinmesiyle, doğanın gizemli güçleri, kaptandan ve lanetlenmiş tayfadan Albatrosun öcünü almaya başlarlar. *"Sıcak bakırdan kanlı bir gökyüzünde kanlı bir güneş gibi"* tepelerine dikilir. Yaşatan bir güneş değil, öldüren bir güneştir bu. Tekneleri sanki *"okyanus tablosunda bir gemi resmiymiş gibi"* günlerce hiç kıpırdamadan kalır. Derken acıların en korkuncu, susuzluk başlar; dört bir yanları sularla çevrili olduğu halde, susuzluktan kavrulmaktadırlar. Doğa gittikçe daha da korkunçlaşır, denizin yüzünde ve derinliklerinde iğrenç yaratıklar kaynaşır. Deniz, cadı kazanları gibi, rengarenk canlıların saçtığı ışıklarla yanıp söner. Öfkeyle dolu tayfalar, kaptanı

[2] Yaşlı Gemici, Mina Urgan'ın (İngiliz Edebiyatı Tarihi, YKY- İst. 2008. s. 605-613) künyeli eserinden özetlenerek aktarılmıştır.

cezalandırmak için, öldürdüğü Albatrosu bir haç gibi, yaşlı gemicinin boynuna asarlar (Urgan,2008: 608). Sularda en küçük bir kıpırtı, havada en küçük bir esinti yoktur. Bir ara onlara doğru yaklaşan bir gemi görürler. Lanetli denizciler ilkin sevinirler. Ama o yelkenli gemi, kendi tekneleriyle batan güneşin arasına girince, bunun bir hayalet gemi, sadece kaburgaları olan bir gemi iskeleti olduğunu anlarlar. O zaman tayfanın duyduğu sevinç, yoğun bir korkuya dönüşür. Hayalet gemide bir erkekle bir kadından başka kimse yoktur.

Hayalet gemide, "Ölüm" ile "Yaşarken Ölüm" zar atarlar. Bu zar oyunuyla yaşlı gemicinin yazgısı saptanır. "Ölüm"den bin beter olan "Yaşarken Ölüm", başlıca suçluyu, yani yaşlı gemiciyi; "Ölüm" ise tayfaları ifade eder. Zar oyununun bitmesiyle ansızın karanlık basar; hayalet gemi, geldiği gibi gizemli bir hızla uzaklaşır.

Yaşlı gemiciyle arkadaşları, şimdi korku dolu bir bekleyiş içindedirler. Bu korku çarpıcı bir imgeyle verilir: *"Korku, bir kadehten içercesine, can bağışlayan kanımı / Yüreğimden yudum yudum içiyordu sanki"* (Urgan,2008: 610). Derken zar oyununda "Ölüm"'ün kazandığı gemiciler, bir tek söz söylemeden, Albatros'u vuran Yaşlı Gemici'yi sadece gözleriyle lanetleyerek, birer birer yere düşüp ölürler.

Yaşlı Gemici güvertede cansız yatan arkadaşlarının arasında durur, gittikçe sümüksü varlıklarla çürüyen sularda kaynaşan iğrenç yılanlara bakar. O garip, sümüksü yaratıklardan bile iğrenç bulur kendisini. Gözlerini gökyüzüne doğru kaldırıp, dua etmeye çalışır. Ama dudaklarından bir tek söz bile çıkmaz. Çevresine yatan ölmüş arkadaşlarının, ona hâla lanetleyen gözlerle bakmaları acısını büsbütün artırmaktadır.

Yaşlı Gemici'nin çevresini sümüksü varlıklar ve deniz yılanları sarmıştır. Bir zaman sonra, önceden iğrendiği deniz yılanlarını ay ışığı altında güzel bulmaya ve onları kutsal bir varlık olarak algılamaya başlar. Hayatın anlamını idrak etme noktasına yaklaşmış, bu duygular içinde dua etmeye gayret etmektedir. Tanrıya yalvarmak isteği duyar. Dua eder etmez, boynuna asılı günah sembolü Albatros kendiliğinden kopup denize düşer, bir kurşun gibi sulara gömülür. Suçunu simgeleyen bu ölü kuştan kurtulması, onu tutsak eden kötü büyünün artık çözülmeye başlayacağının, çektiği cezanın bundan böyle hafifleyeceğinin müjdecisidir. Nitekim, bazı olağanüstü gelişmeler olur, sonunda yağmur yağar. Güvertedeki kovalar yağmur suyuyla dolar. Tabiatüstü varlıklar gemiyi hareket ettirmeye başlarlar. Bu fevkalade durumlar karşısında Yaşlı Gemici dayanamaz, baygınlık geçirir. Tekne geceleyin normal bir hızla ilerlemeye başlayınca, gemici kendine gelir. Arkadaşları güvertede cansız yatmaktadırlar, lanetleyen gözlerle sanki canlıymışçasına hâlâ ona bakmaktadırlar.

Şafak sökünce Yaşlı Gemici büyük bir sevince kapılır. Çünkü gizemli olduğu kadar da uğurlu bir rüzgâr, gemiyi yelken açtıkları kiliseli ve deniz fenerli küçük limana geri getirmiştir.

Birkaç kişi bir sandalla gemiye doğru yaklaşmaktadırlar. Bu esnada denizin altında gök gürültüsünü andıran korkunç bir patlama duyulur, lanetli gemi bir an içinde sulara gömülür. Kılavuzun oğlu korkudan delirir. Yaşlı gemici karaya adım atar atmaz, işlediği suçu ve çektiği cezayı hemen anlatmaya başlar: ancak içini döktükten sonra biraz rahatlar. Hala "Yaşarken Ölüm"ün tutsağı olduğundan, ölmenin huzuruna kavuşamayan yaşlı gemici, sürekli olarak diyardan diyara gitmek ve hikayesini insanlara anlatmak ister (Urgan,2008: 612).

II. İtiraf, Anlatma, Paylaşma ve Ruhsal Büyüme

İnsan olmak, bir anlamda "hikâyesi olmak"la eşdeğerdir. Hepimiz bir hikâyeler ve hatıralar ambarı gibiyiz. Bu ambar hüzün, ıstırap ve acılarla dolduğunda bir boşalıma yani paylaşıma

ihtiyaç hasıl olur. Makalemize konu olan Yaşlı Gemici şiiri de masum bir Albatros'u kasten öldüren bir denizcinin doğaüstü ruhsal ve fiziksel cezasını ve bu ağır suçun kefaretini konu alıyor. Romantik bir şiirde suçsuz bir canlıyı öldürmenin ne denli dehşet verici sonuçlar doğurduğunu Yaşlı Gemici hikayesiyle anlamaktayız. Şiirin dramatik doruk noktasını yaşlı Gemici'nin suçsuz yere Albatros'u vurmasının ardından, itiraf ve anlatarak paylaşma ihtiyacının oluşturmaktadır. Yaşlı Gemici ıstırap ve pişmanlığını genç bir adamla paylaşımının ardından içsel yolculuğun kapıları aralanmış hem ihtiyar anlatıcı hem de genç dinleyici ruhsal olgunluğa ve bilgeliğe doğru yol alaya başlamışlardır.

Yaşlı Gemici Romantik Akımı temsil eden öncü bir şiirdir. Romantizmde insan, tabiat ve Tanrı bütünlüğü önemlidir. Bu birlik neticesinde insan ruhsal ve zihinsel açıdan büyümeye ve bilgeliğe doğru yol almaya başlar. Kendi benliğinin zayıf ve güçlü yönlerini idrak eder. Kişisel macerasından kendi içsel yolculuğuna doğru akıp gider:

"Edebiyatta romantik eserin tipik bir örneği, kahramanın araftan yola çıkarak, genellkle büyülü ya da ruhsal deneyimlerle, masumiyetten, hüzünlü bir bilgeliğe aldığı yoldur. Deneyim kişiseldir. Romantiklerden önce her şeye tepeden bakan, didaktik bir anlatıcı varken, Romantiklerle birlikte daha öznel olan "ben" anlatıcı edebiyata girmiştir. Romantikler aydınlanmanın gözlem ve deneyim temelli görüşünü benimseyerek, anlatıcının kişisel tecrübelerine önem vermişlerdir." (Ercan, 2009)

Samuel T. Coleridge, William Wordsworth ve Keats gibi Romantizm'in kurucusu kabul edilen şair ve yazarların savunduğu görüşler arasında bireysel hayal gücü, doğa ve doğadaki güçlere hayranlık, idealizm, tanrısal gücü ve esrarı kutsama benzeri görüşlerin öne çıktığı görülür: "*Romantik yazarların en önemli özelliklerinden bazıları, bireyselciği, hayal gücünü, duyguyu ön plana çıkarmaları ve özgürlük adına mücadele vermeleridir"* (Keach, 1996; 456). Çoğu Romantik şair gibi Coleridge de doğaya ve doğadaki canlılara önem atfetmektedir:

"Diğer romantik yazarlar gibi Coleridge de doğaya özel önem vermektedir. Şiirlerinde doğal dünyanın güzelliklerini aktarmaktadır. Coleridge'in neredeyse tüm şiirlerinde doğal güzelliğe saygı ve övgüler bulunmaktadır. The Rime of the Ancient Mariner şiiri de, doğadan bazı önemli sembolleri ve imgeleri barındırmaktadır" (Güngör,2020:17).

Yaşlı Gemici adlı şiirde sanayileşmenin doğaya ve insanın hayal gücüne verdiği zararlara da ince göndermeler vardır. Şair Samuel Taylor Coleridge, bu konudan o kadar çok mustarip olmuştur ki adına *"pantisocrasi*" denilen sanayileşmiş bölgelerden kaçarak, Amerika'da güzel bir nehir kıyısında, doğanın kucağında yeni ve sade bir toplum kurma ütopyasına öncülük etmiştir (Çobanoğlu, 2021, ICOESS-5). Bu kaçış temasının temelini de Sharma'nın ifade etiği gibi şu görüşler oluşturmaktadır:

"On dokuzuncu yüzyıl, Romantik şairleri Britanya'da mevcut sisteme karşı isyan etmişler ve doğanın güzelliği ve gizemini öven düşünce ve duyguları ifade etmişlerdir… Bu şairler radikal görüşlere sahiptir ve doğal dünyanın korunması için kapitalistlere, sanayicilere ve maddiyatçılara karşı görüşlerini, endişelerini dile getirmişlerdir" (Sharma, 2016).

İnsanın kendisini idrak etmesinde romantik akımın etkilerine kısaca temas ettik. Bu konuda dikkat çekici bir başka husus, yaşanılan fiziki ve manevi ıstırapların anlatmak suretiyle dinleyicilerle paylaşılabilmesidir. Bu noktada anlatmak kadar dinleme yetisinin de önemli olduğunun altı çizilmelidir. Acıların itiraf edilmesi sürecinde içten bir dinleme şekli olan hipnotik dinleme becerisi önemlidir. Dinleyebilmek ve dinlenebilmek insanlığın hizmetine sunulmuş en büyük armağanlardan birisidir. Anlama ve dinleme hepimize doğuştan verilmiş

bir yetenektir. İnsanoğlu acıları paylaşmak için anlatır ve dinler. Bacon'un ifade ettiği gibi, "Dertlerini dökecek dostları olmayanlar kendi yüreklerini tüketirler." Hipnotik, yani gözle, kulakla ve yürekle beraber dinleme karşımızdaki insanın "bir", "var" ve "hür" olduğunu hissettirebilme becerisidir.

Şurası açıktır ki, iyi bir dinleme atmosferinin oluşmasında hakiki bir serüvenin ardından pişmanlık ve nedamet sarmallarında bitip tükenmiş, derdini bir ademoğluna dökmek arzusuyla yanıp tutuşan tutkulu bir anlatıcıya da ihtiyaç vardır. Anlatmak, itiraf ve anlaşılmak iyi bir terapi yöntemidir. Augustius Aurelius'un dediği gibi, insan öncelikle acı tecrübelerin olgunlaştırıcı yönünü kendi ruhunda hissetmelidir. *"Tanrım, beni kendime göster ki, kendi benliğimde ne yaralar keşfettiğimi kardeşlerime itiraf edebileyim"* (Augustius, 2010: 18).

İnsanın paylaşmadan içinde tuttuğu pişmanlıklar ve olumsuz düşünceler zamanla daha da büyümekte, fiziksel ve ruhsal sağlık sorunlarına sebep olmaktadır. Bu sebeple "Acıların paylaşıldıkça azalacağı" düşüncesinden hareketle güven duyulan bir insana aktarılması gerekmektedir.

"Psikolojik sorunların aşılmasında konuşmak ve paylaşmak çok önemlidir. Yakın bir arkadaşınızla, ailenizden biriyle, komşunuzla veya uzman bir danışmanla olsun konuşmanın önemi çok büyüktür. Konuşmak, gerginliği içeride tutmak yerine serbest bırakmanızı sağlar. İnsanlarla bağlantı kurmanıza, sosyal ilişkilerinizi güçlendirmenize katkıda bulunur" (Cura, e.t. 2022).

Her insan aslına bakılacak olursa, yaşadığı hatıralardan ve hikâyelerden oluşmuştur. Asırlar boyu hikâye anlatma insan olmanın ve insan kalmanın varoluşsal bir boyutunu teşkil etmiştir. Robert Fulford, *Anlatının Gücü, Kitle Kültürü Çağında Hikâyecilik* başlıklı eserinde bu konuda dikkat çekici bilgiler vermektedir: İnsan hikayesinden kaçamaz. Bunun sebebi hikayelerin benliğimizi inşa etmeleridir. Hikayeler salt bir olaylar zinciri olmanın ötesinde onların anlam yüklü olmaları, değer yargıları içermeleri ve sonunda ahlaki bir tutum takınmamıza vesile olmaktadırlar. Anlatmaya ihtiyaç duyulmasının sebebi, insanın kendisini bütünleyen bir hikâyesinin olduğuna inanmasıdır. Bir hikâyesinin olmadığını düşünmek, insanı varoluşunun anlamını sorgulatmaya yöneltir (Fulford, 2014: 19-24).

Yorumlamaya çalıştığımız Yaşlı Gemici adlı şiirin kahramanının yaptığı gibi, hikâye hiç tanımayan bir yabancıya anlatılmış olsa bile, bir tür arınmaya yani "katarsise" sebep olabilir. Katarsis, kahramanın karakter zaafları dolayısıyla yanlış tercih ve yönelimleri sonucunda, büyük acılar çekmesi, bedeller ödemesi sürecinde gerilimin doruk noktasına çıkmasıdır. Baht çizgisinin kırılması ve değişmesi sonucu hatalarının bedelini hem fiziki hem de psikolojik olarak ödemesine bağlı olarak, insanlık erdem ve bilincinin farkına varması, duygularının temizlenmesi anlamına gelmektedir (Çobanoğlu, 2018). Bir eserde kahramanın katarsis olgusunu deneyimlemesi kolay gerçekleşmemektedir. Her şeyden önce Aristoteles'e göre trajik kahraman, mutlu bir ruh hâlinden felakete geçiş yapmalı; felaketi karakterin iyi veya kötü olmasından değil, kendine ait bir yargı hatası yüzünden gerçekleşmelidir. (Cevizci, 2008: 464)

Postyapısalcı süreçte anlatı geleneğimizin bir tür Yapıbozuma uğratılmış olduğuna da değinmek gerekiyor. Postyapısalcılar, hikâyenin neticede bir sözel aktarım olduğunu, anlatıcıya güven duyulamayacağını vurgulamaya başlamışlardır. Kabakçı'nın Fulford'dan aktardığına göre, bu tür "anlatı düşmanları"nın ortak noktası *"anlatının kurgusallığını ortaya sermeleri, giriş gelişme sonuçtan oluşan hikâyenin çizgiselliğini bozmaları, kurgusal anlatıyı bilinçli olarak parçalamaları, karakterle özdeşleşmeye izin vermemeleri ve anlatının*

inandırıcılığını zedelemeleridir" (Kabakçı, 2017: 524). Post yapısalcıların hikâyeye karşı bu olumsuz bakış açılarına rağmen, hikâye insanidir, insandan koparılamaz, zamanla şekil değiştirmiş olsa bile insanın var oluşunu inşa etmeye devam edecektir.

Yaşlı Gemici'nin Dilinden Anlatma ve Arınma Serüveni

Yaşlı Gemici uzun, yıpratıcı ve olağanüstü bir deniz macerasının ardından karaya ayak basar. Yaşadığı sıra dışı ve insanlık değerleriyle bağdaşmayan serüvenini anlatmak ve bu yolla arınmak tutkusuyla yanıp tutuşmaktadır. O sırada düğün törenine giden bir gençleri görür. Düğün davetlisi gençlerden birisinin önüne geçerek zorla durdurur. *"Bir zamanlar bir gemi vardı"* diyerek ve kor gibi gözleriyle onu bulunduğu yere mıhlayarak hikayesini soluksuz anlatmaya başlar. Genç adam bir an önce kurtulup düğüne katılmak ister. Yaşlı Gemici onu hiç umursamaz, heyecanla ve iştiyakla anlatmaya devam eder:

"Rıhtımdan uğurlandık, sefere yollandık,
Çıkıp limandan açtık yelkenleri,
Ardımızda kaldı kiliseyle tepe,
Ardımızda kaldı deniz feneri. (Coleridge, 2008: 18)

Sonra acayip bir fırtına çıkar, dalgalarla boğuşurlar ve gemileri güneye doğru sürüklenmeye başlar. Hava buz gibi olur; kar, buz, bora ve fırtınadan göz gözü görmez olur:

"Ve sonra bir FIRTINA koptu
Dev gücüyle tutup savurdu bizi,
Düşüp son hızla peşimize
Güneye kovaladı gemimizi. (Coleridge, 2008: 26)

Sonra bastırdı hem sis, hem kar,
Hava giderek soğudu çok;
Geçti yanımızdan, koca dağlar buzdan,
Öyle yeşil ki zümrütten farkı yok. (Coleridge, 2008: 29)

Yaşlı Gemici ve tayfası bu kıyamet benzeri hava şartlarıyla boğuşurken aniden güvertede bir Albatros görünür. Tepelerinde dönmeye başlar. Gemiciler onu güzel yiyeceklerle beslerler. Bir zaman sonra olumsuz hava şartları değişmeye başlar. Albatros onların kurtuluşuna vesile olmuştur. Sanki bu kuş bir kurtuluş meleğini hatırlatmaktadır. Yaşlı Gemici bu sahneyi şu şekilde anlatır:

Hiç yemediği yiyeceklerden yedi,
Döndü tepemizde hiç durmadan.
Bir anda buz yarıldı, çatırdayıp ayrıldı;
Dümenci geçirdi bizi o aradan!

Çıktı güney rüzgârı, terk ettik oraları.
Albatros da düştü ardımıza,
Gelip yedi her zaman, ya da oynadı bir an
Gemiciler onu çağırdığında. (Coleridge, 2008: 36)

Her şey yoluna girmiştir. Yaşlı Gemici, tayfası ve Albatros sükûnet içinde seyretmektedirler. Hiç beklenmedik bir anda Yaşlı Gemici okunu kaptığı gibi çeker tetiği ve Albatrosun canını alır. Her şey buz kesmiştir adeta. Bu andan itibaren gemicilerin baht çizgisi dönmeye başlar. Bu hadise şiirdeki trajik atmosferin ve heyecanın yükselmesini tetikler. Yaşlı Gemici'nin genç Düğün Konuğu'na yaşadıklarını anlatırken eli ayağı titremektedir:

"Tanrı kurtarsın seni, yaşlı Gemici!
Nen var? Ne titretiyor her yanını?"
"Kaptım oklu tüfeği, çektim hemen tetiği,
Aldım ALBATROSUN canını
(Coleridge, 2008: 40

Yaşlı Gemici'yi hiç beklenmeyen ve normal etik sınırları zorlayan böyle bir harekete yönlendiren sebepler hakkında hikâyede herhangi bir bilgi verilmemektedir. Bu tür sıra dışı hareketleri *"acte gratuit"* olarak adlandırmak mümkündür. Kavramı kişinin içsel bir dürtüyle gerçekleştirilen sebepsiz yere bir eylemi gerçekleştirmesi olarak adlandırmak mümkündür. Davranış ve fiillerinde kişinin hiçbir ahlaki kayda bağlı olmaksızın tamamen özgür hareket etmesi ve anlık içsel bir güdüyle harekete geçerek anormal bir eylem gerçekleştirmesi anlamına gelmektedir. *"Acte Gratuit"* kavramının aslı Fransızcadır. Daha çok bu anlamda Andre Gide'in eserlerinde kullanıldığı görülmektedir (Oxford Lexico Dictionary, e.t.: 20/01/20229). Yaşlı Gemici'nin beklenmedik saldırısı sonucu Albatros artık aralarında yoktur. Gemicilerin tadı tuzu kaçmış, bir huzursuzluk başlamıştır. Albatros'a üzülmekte, onu aramakta ve kaptanı suçlamaktadırlar. Kaptan da işlediği suçun farkındadır. Pişmanlık ve suçluluk duyguları usul usul, ince ince benliğini sarmaktadır:

Korkunç bir şey yapmıştım herkese göre,
Başımıza bir gelecek vardı.
Dediler, açık şu: Öldürdün o kuşu,
Estiren bu hayırlı rüzgârı.
Alçak, nasıl ettin, o kuşu katlettin,
Estiren bu hayırlı rüzgârı? (Coleridge, 2008: 43)

Yaşlı Gemici kendisini hayret ve şaşkınlıkla dinleyen genç adama hikayesini ısrarla ve bıkıp usanmadan anlatmaya devam eder: Bir süre iklim şartları ve rüzgâr yolunda gitmiştir. Fakat gittikçe güneş yakmaya rüzgâr esmemeye ve Tanrı'nın gazabı belirmeye başlamıştır. Her taraf tuzlu sularla kaplanmış olmasına karşın içecek bir damla su bile bulunmaz:

Su, su, nereye baksan yalnızca su,
Güverte tahtaları çekti zamanla;
Su, su, nereye baksan yalnızca su,
Ama hiçbir yerde yok içecek bir damla (Coleridge, 2008: 51).

Bütün gemicilerin sıcaktan boğazları kurumuş, dudakları çatlamış ve bu durumun tek suçlusu olarak ihtiyar gemiciyi görmektedirler. Kaptana nefretle bakmakta ve hakaretler etmektedirler. Şiirde bu tablo şu dizelerle anlatılmaktadır.
Ah işte baktı yüzüme nefretle
Gemideki herkes, genç olsun, yaşlı olsun;
Sövüp birlikte bana astılar boynuma
Haç yerine ölüsünü Albatrosun (Coleridge, 2008: 55).

Gemide bulunan tayfalar Albatros'un ölüsünü işlediği bu büyük günahın manevi sancılarının bir sembolü olarak yaşlı Gemici'nin boynuna bir haç misali asmışlar ve sürekli bu azapla yüz yüze kalmasını istemişlerdir.

Albatros ve simgesel anlamı

Albatrosun simgesel anlamı oldukça geniş bir çerçeveden değerlendirilebilir. Yaşlı Denizci'nin Albatrosu öldürmesi, insanın doğaya hükmetme arzusunun ve ilahi adalete karşı çıkışının, bir başka ifadeyle anlık dürtülerine yani nefsine yenik düşmesinin bir örneği olarak değerlendirilebilir. Denizci kutsal olana saygı ve vefa duymamış, tam tersine iyilik edene kötülük ve zalimce karşılık vermiş, ilahi adaleti sıradanlaştırmıştır.

Tabiat tanrı tarafından yaratılmıştır, doğaya ve canlılara saygı aynı zamanda Yaradan'a saygı anlamına gelir. Her canlı insana faydalı olmasa bile kendi içinde bir değer taşır, dolayısıyla saygıyı hak eder. Ayrıca Albatros, buz dağlarıyla kaplı ölü bir çevrede hayat ışığını ve Tanrı tarafından zor durumdaki insanlara yardım elinin ulaştırılmasını simgeler.

Yaşlı Gemici şiirini ekoeleştiri açısından inceleyen Özgür, Albatros'un simgesel anlamını şu ifadelerle değerlendirmektedir:

"Albatros hem doğal hem de manevi dünya arasındaki bağı temsil etmektedir. Albatros hem Tanrı ve hem de doğal dünya ile denizciler arasında bir bağ kurar. Doğayı temsil eder, çünkü doğanın bir parçası olarak orada bulunmaktadır. Aynı zamanda doğaüstü gücü temsil etmektedir, çünkü orada bulunmasının nedeni Tanrı tarafından denizcilere kurtarıcı olarak gönderilmiş olmasıdır" (Güngör, 2020: 10).

Kuraklık ve açlık gemicileri o kadar perişan etmiştir ki, kendilerini kurtarmaya geldiğini düşündükleri hayalet gemiler görmeye başlarlar. Deniz yüzeyinde sümüksü varlıklar ve deniz yılanları da ortaya çıkmış, ürkütücü bir tablo oluşmuştur. Denizler adeta çürümüştür. Tüm tayfalar ölmüştür. Yüzlerindeki ifade ve gözlerindeki lanetli bakış dehşetli bir sahne yaratmıştır. Yaşlı Gemici sanki yaşayan bir ölüye benzemektedir. Düğün Konuğu genç adam düğün törenini unutmuş, korkulu gözlerle ve dehşetle titreyerek ihtiyarı dinlemektedir. Bir ara şu sözler dökülür ağzından:

Korkuyorum o kor gibi gözlerinden,
Korkuyorum o sıska, boz elinden de."
"Korkma, Düğün Konuğu, korkma hiç;
Bil ki ölmedi bu gördüğün gövde.

Yalnızdım, yalnızdım, yapayalnızdım
Uçsuz bucaksız bir denizde
Ve işkence içindeki ruhuma
Merhamet etmedi çıkıp bir aziz de (Coleridge, 2008: 71).

Yaşlı Gemici bu dehşet tablosu karşısında tek çare olarak Tanrı'ya yönelmek ve dua etmek ihtiyacı hisseder. Dua sonrası korkunç tablo biraz değişmiş ve hafiflemiş gibidir. Şimdi etrafta ışıltılı görüntüler sergileyen rengârenk deniz yılanları vardır. Yağan yağmur güvertedeki kovaları suyla doldurmuş ve *"Yüce Mevla kendisine Cennetten bir uyku göndermiş",* tüy gibi hafiflemiştir.

Ve dua edebildim o anda,
Hafifledi boynum ansızın
Sıyrılıp düşüverdi Albatros
Ve kayboldu altında suların (Coleridge, 2008: 85).

Kıpırdandığımda tüy gibiydi her yanım;
Hafiflemiştim ki öylesine
Neredeyse sandım uykumda ölüp
Dönüştüğümü kutsanmış bir hayalete (Coleridge, 2008: 89).

Yaşlı Gemici, genç düğün konuğuna yaşadığı trajedinin tanrısal bir elin yardımıyla nasıl kurtuluşa doğru yönlendirilişini anlatmaya devam eder. Bu esnada o kadar değişik manevi yardım ve görüntülere şahit olmuştur ki neticede yaşadıklarının tesiriyle baygınlık geçirmiştir. *"Ama yokken dalga da, rüzgâr da / Nedir bu gemiyi hızla götüren?"* (Coleridge, 2008: 108). Duanın ardından manevi yardım eli uzanmış gemi ilerlemeye başlamıştır. Tayfalar ölmüşler ve kurtulmuşlardır. Yaşlı gemici ise suçunun bedelini hala ödemektedir. Gaipten gelen bir ses şu kelimeleri fısıldamaktadır: *"Ceza çekti bu adam / Ve daha da ceza var çekeceği."* (Coleridge, 2008: 108).

Yaşlı Gemici düşle hakikat arasındadır. Meleklerden bir ordunun sessizliğin müzikal senfonisi içinde kendisine el salladığını dile getirir. Bir zaman sonra bir kürek sesi duyulur. Kendilerini kurtarmak üzere bir kılavuz eşliğinde ilahiler söyleyerek birkaç kişi gelmektedir:

Üçüncü birisi vardı yanlarında
Tanıdım sesinden o Münzevi Adamı,
Bağıra bağıra söylediği ilahilerle
İnleten yaşadığı korunun her yanını.
Günah çıkartırım ona, diye düşündüm,
Yıkar benim için Albatrosun kanını Coleridge, 2008: 89).

Yaşlı Denizci karaya çıkar çıkmaz gemide yaşadığı manevi havanın büyüsü bozulmuş, bütün göksel ışıklar kaybolmuştur. Kayıkta bir de rahip benzeri münzevi kılıklı adam vardır. Bu münzevi adamın kirlenen ruhunu günahlardan arındırmasını, günahlarını çıkartmasını bekler.

Dedim, 'Çıkart günahımı, kutsal adam!'
Haç çıkarttı geçirip elini yüzünden;
Dedi, 'Söyle bana, söyle hemen şimdi,
Nesin? Ne biçim bir insansın sen?'

Anında kavrayıverdi gövdemi
Derin, dayanılmaz bir acı;
Anlatmaya başladım hikâyemi
Ve öyle dindi ancak o sancı. (Coleridge, 2008: 140).

Yukarıdaki dizelerde anlatıldığı gibi, Coleridge Yaşlı Gemici başlıklı şiirinde arınmanın iki yoluna işaret eder. İlki bir rahibe itiraf ederek günahlardan arınmak. Diğeri de gözlerinde içsel gelişim ve ruhsal büyüme ışığı gördüğü sıradan insanlara bu mistik hikâyeyi bıkıp usanmadan, ısrarla anlatmak. Nefsi düşük mertebelerden yüksek seviyelere çıkarmanın yolu, acılarla boğuşarak, ardında bir hikâye bırakmak ve bu hikâyeyi içsel yolculuğun kapılarını aralayan bir anlatıya dönüştürebilmektir.

O gün bugündür, beklenmedik bir anda
Başlar gene o büyük acı bende
Ve anlatana dek bu korkunç hikâyeyi
Yanıp tutuşur yüreğim içimde. (Coleridge, 2008: 143)

Bu arada düğün töreni ve eğlence devam etmektedir. Genç Düğün Konuğu dinlediği olağan üstü hikâyeden o kadar etkilenmiştir ki artık düğüne gitmek istemez. O da dünyanın eğlence denen insanı oyalayan aldatıcı tuzaklarından uzaklaşmak ister. Ruhsal büyüme ve arınmanın eşiğine gelmiştir. Yaşlı Gemici de sıradan eğlenceler yerine saf ve temiz insanlarla beraber,

Tanrı evi sayılan kiliseye giderek Tanrı'nın huzurunda baş eğmenin daha erdemli bir davranış olduğunu ifade eder:

Gitmek birlikte kiliseye
Ve hep birlikte dua etmek
Eğerken hepsi Rabbine baş,
Her dede, her bebe, her arkadaş,
Her güzel kız, her genç erkek Coleridge, 2008: 152)

Coleridge'in Yaşlı Gemici başlıklı şiiri ruhsal büyüme ve arınmanın unutulmaz bir destanıdır. Bu anlamda dünya edebiyatının en sevilen romantik şiirlerinden birisidir. Romantizm Tanrı, insan ve tabiatın el ele işlendiği bir edebi akımdır. Bu açıdan yaklaşıldığında Yaşlı Gemici Romantizm'in öne çıkan özelliklerini yansıtmaktadır. Romantikler sanatı ve edebiyatı mantığın dogmalar zincirlerinden kurtararak, tamamen özgürleştirmek, hayal gücünü zirveye çıkartmak istiyorlardı. Bir başka ifadeyle, *"Görmeyen gözleri"* açmak, *"İşitmeyen kulaklara duyurmak", "Hissiz ve kurumuş kalpleri canlandırmak"* arzusundaydılar (Babbit, 1919: 1-31). Bu çerçevede Yaşlı Gemici'nin Genç adama söylediği sözler oldukça anlamlıdır. Yunus Emre'nin *"Yaratılanı hoş gördük Yaratan'dan ötürü"* sözünün tekrarı gibidir.

Elveda, Düğün Konuğu, elveda,
Ama isterim şuna inanmanı:
İyi dua eder o kişi ki sever
Hem insanı, hem kuşu, hayvanı.

En iyi dua eden sevendir en yürekten
Büyük, küçük, tümünü canlıların
Çünkü bizi de seven sevgili Tanrı
Yaratmıştır ve sever hepsini onların. (Coleridge, 2008: 152)

Yaşlı Gemici şiirinin destansı ve olağanüstü hadiseleri hem ihtiyar kaptanın hem de genç adamın, anlatma ve anlamanın tipik bir örneği olarak, ıstıraplı bir içsel yolculuğun sonunda, hakikatin ışığıyla aydınlandıklarını ve bilge bir kişiliğe kavuşmalarını ifade eder. Şiir şu dizelerle okurlara veda eder.

Böyle deyip kor gözlü gemici
Gitmişti kır sakalıyla oradan,
Düğün Konuğu da girmeyip içeri
Geri döndü güveyin kapısından.

Uzaklaştı sessizce ağır ağır,
Kendini vurgun yemiş gibi duyarak
Ve açtı gözlerini ertesi sabah
Daha hüzünlü ve bilge biri olarak (Coleridge, 2008: 156).

VI. Sonuç ve Değerlendirmeler

Yaşlı Gemici Samuel Taylor Coleridge'in hayatından izler taşıyan manzum bir destandır. İnsan, Tanrı ve tabiat bütünlüğünü simgeleyen, dünya edebiyatının en güzel romantik şiirlerinden birisidir. Colerige'in düş ve hayal gücünün şiirde yansımasının seçkin örnekleri arasında kabul edilmektedir.

Eserde fantastik, romantik ve gerçekçi unsurlar iç içe işlenmiştir. Tanrı'nın bir eseri olarak tabiata saygı duymak gerekir. Hiçbir güç tabiatla yarışamaz. Hayatın doğal akışına aykırı müdahaleler Tanrı tarafında doğa üstü yöntemlerle cezalandırılır. Ancak, suç ve ceza sonsuz değildir. Dualar ve nedamet hisleri mucizeleri davet edebilir; kurtuluşun kapılarını arayabilir. Eser, insanın rasyonel ve irrasyonel yönüyle birlikte hayal gücünü veciz bir anlatımla dile getirmektedir.

Yaşlı Gemici'de Albatros'un simgesel anlamı üzerinde genişçe durulmaktadır. İhtiyar Gemici'nin Albatros'u yok yere öldürmesi, insanın içindeki kötülüğün harekete geçerek, ilahi adalete karşı çıkması ve bir anlık nefsani duygularına kapılmasının bir yansıması olarak da değerlendirilebilir. Bu durum modern psikolojide *"acte gratuit",* sebepsiz yere zalimane davranışlarda bulunmak olarak adlandırılmaktadır.

Şiirden çıkarılabilecek sonuçlardan birisi de, insanın bilinçsizce suça ve günaha bulaşabileceği gerçeğidir. Ancak Hz. Âdem ve Havva'nın ilk günahı işleyip pişman olmaları gibi, Yaşlı Denizci de sonunda Albatros'u yok yere öldürdüğüne pişman olmuştur. İçinde taşıdığı büyük nedamet duygusunu Düğün Konuğu gibi sıradan insanlara anlatarak, onların da kendi zayıflıklarını fark etmelerine vesile olmuştur. Bu anlamda eser, anlatarak ve paylaşarak ruhsal olgunluğa ve zihinsel büyümeye kavuşmanın bir simgesi mahiyetindedir.

Yaşlı Gemici, yol ve yolculuğun, anlatma ve paylaşma ihtiyacının veciz biçimde ifade edildiği bir nehir şiirdir. Duyguları yazarak veya dile dökerek ifade etmenin insanın ruh ve beden sağlığını nasıl olumlu bir şekilde etkilediği bilinen bir husustur. Kısaca Yaşlı Gemici, Suç, ceza, pişmanlık, itiraf ve nedamet hisleri içinde anlatıcı kahramanın ve dinleyicinin ruhsal arınma ve olgunluğa kavuşmasının destansı bir yol ve yolculuk hikayesidir.

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