

# VI. BİLSEL ULUSLARARASI DÜNYA BİLİM VE ARAŞTIRMA KONGRESİ



4. CİLT

## KONGRE KİTABI

28-29 ARALIK  
2024



İSTANBUL

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# 6. BİLSEL INTERNATIONAL WORLD SCIENCE AND RESEARCH CONGRESS BOOK

28-29 DECEMBER 2024,  
İSTANBUL/TÜRKİYE

**EDITOR**  
**Assoc. Prof. Dr. İlyas ERPAY**

4. CİLT

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**CONGRESS ID**  
**CONGRESS TITLE**

**6. BİLSEL INTERNATIONAL WORLD SCIENCE AND RESEARCH CONGRESS**

**DATE and PLACE**

**28-29 DECEMBER 2024, İSTANBUL/TÜRKİYE**

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6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

# 6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS

28-29 DECEMBER, 2024  
İSTANBUL/TÜRKİYE

## CONGRESS PROGRAM

Join Zoom Meeting ID: **815 9390 5889**

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(Örnek: Session-1, Hall-1, Azat KALİ)



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

**IMPORTANT**

- ◆ To be able to make a meeting online, login via <https://zoom.us/join> site, enter ID instead of “Meeting ID or Personal link Name” and solidify the session.
- ◆ The presentation will have 10 minutes .
- ◆ The Zoom application is free and no need to create an account.
- ◆ The Zoom application can be used without registration.
- ◆ The application works on tablets, phones and PCs.
- ◆ Speakers must be connected to the session 10 minutes before the presentation time.
- ◆ All congress participants can connect live and listen to all sessions.

**TECHNICAL INFORMATION**

- ◆ Make sure your computer has a microphone and is working.
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- ◆ Attendance certificates will be sent to you as pdf at the end of the congress.

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- ◆ Kongremizde Yazım Kurallarına uygun gönderilmiş ve bilim kurulundan geçen bildiriler için online (video konferans sistemi üzerinden) sunum imkanı sağlanmıştır.
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- ◆ Uygulama tablet, telefon ve PC’lerde çalışmaktadır.
- ◆ Sunum yapacakların sunum saatinden 10 dk önce oturuma bağlanmış olmaları gerekmektedir.
- ◆ Tüm katılımcılar oturumlara online katılıp dinleyebilir.

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**TEKNİK BİLGİLER**

- ◆ Bilgisayarınızda çalışır durumda mikrofon bulunmalıdır.
- ◆ Zoom'da ekran paylaşma özelliği kullanılabilir.
- ◆ Katılım belgeleri kongre sonunda tarafınıza pdf olarak gönderilecektir.



28.12.2024  
TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Doktor Öğretim Üyesi, ASLI URAL

**SESSION-1 HALL-1**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Öğr. Gör. Dr. Onur TOPRAK	Erciyes Üniversitesi,	TIBBİ İLLÜSTRASYON BAŞLIĞI ALTINDA TIP VE GÖRSEL İLETİŞİM ALANI ARASINDAKİ İLİŞKİLERİN SINIFLANDIRILMASI
Doktor Öğretim Üyesi, ASLI URAL	Yozgat Bozok Üniversitesi,	HEMŞİRELİK BÖLÜMÜNDE EMZİRME ÖZYETERLİLİK KONUSUNDA YAPILMIŞ LİSANSÜSTÜ TEZLERİN İNCELENMESİ
Öğr. Gör. Ali SERT Doç.Dr. Mümin POLAT	Burdur Mehmet Akif Ersoy Üniversitesi	KİMYASAL BİYOLOJİK RADYOLOJİK NÜKLEER (KBRN) VAKALARININ SALGINLAR BOYUTUYLA DEĞERLENDİRİLMESİ
Öğr. Gör. Ali SERT Doç.Dr. Mümin POLAT	Burdur Mehmet Akif Ersoy Üniversitesi	KİMYASAL BİYOLOJİK RADYOLOJİK NÜKLEER (KBRN) OLAYLARDAN ÖNEMLİ BİR KİMYASAL SİNİR AJANI: SARİN
Dr. Öğretim Üyesi Aslı KARAKUŞ SELÇUK	Manisa Celal Bayar Üniversitesi,	HEMŞİRELİK ALANINDA İNFERTİLİTE VE YAŞAM KALİTESİ ÇALIŞMALARININ BİBLİYOMETRİK ANALİZİ: TANIMLAYICI BİR ÇALIŞMA
Dr. Öğr. Üyesi Ali MEŞEN Dr. Öğr. Üyesi Selma MEŞEN Dr. Güler KARTAL	Kahramanmaraş Sütçü İmam Üniversitesi	DESME MEMBRAN ENDOTELYAL KERATOPLASTİ UYGULANAN OLGULARIN ÖN SEGMENT PARAMETRELERİNİN DEĞERLENDİRİLMESİ



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

28.12.2024

TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Doç. Dr. Selma KILIÇ KIRILMAZ

**SESSION-1 HALL-2**

AUTHORS	AFFILIATION	TOPIC TITLE
Ceren DOĞAN, İlayda İSTEK, Doç. Dr., Kamil ÇELİK	Bartın Üniversitesi,	DİJİTAL PAZARLAMANNIN GÜÇLÜ ARACI: INFLUENCER PAZARLAMA
Yüksek Lisans Öğrencisi, İlayda İSTEK Yüksek Lisans Öğrencisi, Ceren DOĞAN Doç. Dr., Kamil ÇELİK	Bartın Üniversitesi,	E-TİCARETTE YENİLİKÇİ ÖDEME SİSTEMLERİ
Zülküf AYDEMİR Dr. Öğr. Üyesi, Gülferah ERTÜRKMEN	Gaziantep Üniversitesi, Kahramanmaraş Sütçü İmam Üniversitesi	KAHRAMANMARAŞ DEPREMLERİNİN ÜRETİM YÖNETİMİ VE TEDARİK ZİNCİRİ DAYANIKLILIĞI ÜZERİNE ETKİSİ
Dr. Öğr. Üyesi Sadegül DURGUN	Kahramanmaraş Sütçü İmam Üniversitesi	TÜRK KAMU YÖNETİMİNDE HİZMET SUNUMUNDA YAŞANAN DİJİTAL DÖNÜŞÜMÜN E- DEVLET GELİŞMİŞLİK ENDEKSİ KAPSAMINDA ELE ALINMASI
Doç. Dr. Selma KILIÇ KIRILMAZ	Sakarya Uygulamalı Bilimler Üniversitesi	İŞLETME YÖNETİCİLERİNİN ENDÜSTRİ 4.0 FARKINDALIK DÜZEYLERİNİN BELİRLENMESİ
Doç. Dr. Selma KILIÇ KIRILMAZ	Sakarya Uygulamalı Bilimler Üniversitesi	ETKİLİ YEŞİL İK POLİTİKALARI NELER OLABİLİR?



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

28.12.2024  
TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Dr. Öğr. Üyesi, Hülya YILMAZ

**SESSION-1 HALL-3**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Diyetisyen, Aya AZMANİ MATAR Doç. Dr. Kevser TARI SELÇUK	Bandırma Onyedli Eylül Üniversitesi,	GIDA KATKI MADDELERİNİN ÇOCUKLARDA DİKKAT EKSİKLİĞİ VE HİPERAKTİVİTE BOZUKLUĞU İLE İLİŞKİSİ
Diyetisyen, Dilay KARABIYIK Doç. Dr. Kevser TARI SELÇUK	Bandırma Onyedli Eylül Üniversitesi,	BESİN GÜVENCESİZLİĞİNİN KARDİYOASKÜLER HASTALIK RİSKİYLE İLİŞKİSİ
Dyt. Duygu DURMAZ Prof. Dr. Uğur GÜNŞEN	Bandırma Onyedli Eylül Üniversitesi	KRONİK BÖBREK HASTALIĞI VE BAĞIRSAK MİKROBİYOTASI
Dr. Öğr. Üyesi Şemsi Gül YILMAZ	Karamanoğlu Mehmetbey Üniversitesi,	SAĞLIĞIN GELİŞTİRİLMESİNDE KRİLL YAĞININ ETKİLERİ
Dr. Öğr. Üyesi Şemsi Gül YILMAZ	Karamanoğlu Mehmetbey Üniversitesi,	GOJİ BERRY: SAĞLIK ÜZERİNDEKİ POTANSİYEL ETKİLERİ
Nisa BESLE Dr. Öğr. Üyesi, Hülya YILMAZ	Hasan Kalyoncu Üniversitesi, Kahramanmaraş İstiklal Üniversitesi,	ÇOCUKLUK ÇAĞINDA PROBİYOTİK KULLANIMI
Dr. Öğr. Üyesi, Hülya YILMAZ	Kahramanmaraş İstiklal Üniversitesi,	BEBEK BESLENMESİNDE KULLANILAN FORMÜLLERDE GIDA GÜVENLİĞİ
Melike TÖNGÜŞLÜ Doç. Dr., Halil YALÇIN	Burdur Mehmet Akif Ersoy Üniversitesi,	SOSLARIN GIDA GÜVENLİĞİNDEKİ ROLLERİ
İpek AKYÜZ Prof. Dr. Uğur GÜNŞEN	Bandırma Onyedli Eylül Üniversitesi	İNME VE BESLENME YAKLAŞIMLARI
Araştırma Görevlisi, Muhammed Enes KARTAL	Lokman Hekim Üniversitesi,	VEJETARYEN BESLENME VE SPOR PERFORMANSI: AVANTAJ MI, DEZAVANTAJ MI?





28.12.2024

TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Prof. Dr. Esin BASIM

**SESSION-1 HALL-4**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doç. Dr. Refik BOZBUĞA, Jale TUNALI, Dr. Öğr. Üyesi Umit Haydar EROL	Eskişehir Osmangazi Üniversitesi, Kilis 7 Aralık Üniversitesi, Kilis,	BAZI RENKLİ FASULYE GENOTİPLERİNİN KÖK UR NEMATODUNA KARŞI REAKSİYONLARI
Prof. Dr. Esin BASIM Prof. Dr. Hüseyin BASIM	Akdeniz Üniversitesi	ANTALYA İLİ KORKUTELİ İLÇESİ MEYVE YETİŞTİRİCİLİĞİNDEKİ ÜRETİM SORUNLARININ BELİRLENMESİ VE BİTKİ KORUMA UYGULAMALARININ DEĞERLENDİRİLMESİ
Prof. Dr. Esin BASIM Prof. Dr. Hüseyin BASIM	Akdeniz Üniversitesi	ANTALYA İLİNDEKİ FARKLI SUPERMARKETLERDEN ALINAN SEBZE ÖRNEKLERİNDEKİ FUNGAL PATOJENLERİN BELİRLENMESİ
Seçil KALAÇ Prof. Dr. İbrahim YALÇIN	Adnan Menderes Üniversitesi	YEM KARMA MEKANİZASYONUNDAKİ TEKNOLOJİK GELİŞMELER
Prof. Dr. Nurinisa Esenbuğa Prof. Dr. Mustafa Yaprak	Atatürk Üniversitesi	DİJİTAL İKİZ TEKNOLOJİSİNİN TARIM VE HAYVANCILIKTA KULLANIMI
Duygu AVCI ÖKSÜZ Dr. Öğr. Üyesi Mücahit PAKSOY	Kahramanmaraş Sütçü İmam Üniversitesi	TÜRKİYE'DE KADIN KOOPERATİFLERİNİN MEVCUT DURUMU VE SÜRDÜRÜLEBİLİRLİĞİ
Dr. Pınar ARIDICI KARA	Biological Control Research Institute, Yüreğir, Adana,	BAĞDA ÖNEMLİ ZARARLILAR
Dr. Pınar ARIDICI KARA	Biological Control Research Institute, Yüreğir, Adana,	ZEYTİN YETİŞTİRİCİLİĞİNDE ÖNEMLİ ZARARLILAR
Aytekin SARIŞAHİN Doç.Dr. Yasin ÜNAL	Isparta Uygulamalı Bilimler Üniversitesi	TÜRKİYE'DE NESLİ TEHLİKEDE OLAN YABAN HAYVANI TÜRLERİNİN DOĞAL HABİTATLARINA YENİDEN KAZANDIRILMASI VE BU SÜREÇLERİN BAŞARI ORANLARI



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

28.12.2024

TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION: Dr. Pakize GÖK GÜLER**

**SESSION-1 HALL-5**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Ece Nur BALOĞLU	Aydın Adnan Menderes Üniversitesi	KÜLTÜR MANTARININ LED TEKNOLOJİSİ İLE KURUTULMASI VE GELENEKSEL KURUTMA YÖNTEMLERİYLE KARŞILAŞTIRILMASI
Dr. Öğr. Üyesi Ferhat Kiremit Doç. Dr. Fulya Kaya Apak	Aydın Adnan Menderes Üniversitesi,	ÜLKEMİZ KÖKENLİ TIBBİ SÜLÜK TİCARETİ
Doç. Dr. Aykut TOPDEMİR, Dr. Gökçe KENDİRLİOĞLU ŞİMŞEK Öğr. Gör. Tuba OKUTAN,	Fırat Üniversitesi,	Bitki Doku Kültüründe Kullanılan Farklı Bitki Büyüme Düzenleyicilerinin Haematococcus pluvialis mikroalg türünün Gelişim, Astaksantin ve Protein miktarları Üzerine Etkilerinin İncelenmesi
Dr. Pakize GÖK GÜLER	Biological Control Research Institute, Department of Plant Virology, Yüreğir, Adana	VIROID REPLICATION, MOVEMENT AND HOST FACTORS IN PLANTS
Dr. Pakize GÖK GÜLER	Biological Control Research Institute, Department of Plant Virology, Adana	BIOLOGICAL CHARACTERIZATION OF VIROIDS IN INDICATOR PLANTS
MSc, Mehmet YÜKSEL, Doç. Dr. Talat ÖZDEN, Prof. Dr. Yusuf Ersoy YILDIRIM	Ankara Üniversitesi,	A REVIEW OF AGRIVOLTAIC: POTENTIAL OF INCREASING WATER PRODUCTIVITY, LAND USE EFFICIENCY AND SUSTAINABLE AGRICULTURAL PRODUCTION



28.12.2024  
TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION: Doç. Dr. Mustafa Kocakaya**

**SESSION-1 HALL-6**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Helin HELVACIKARA Dr. Öğr. Üyesi Elif Özlem ARSLAN AYDOĞDU	İstanbul Üniversitesi,	EKSTREM ORTAMLARDA YAŞAYAN BAKTERİLERİN PİGMENTLERİ VE KULLANIM POTANSİYELLERİ
Deniz Nazlı GÜLER Dr. Öğr. Üyesi Elif Özlem ARSLAN AYDOĞDU	İstanbul Üniversitesi,	MİKROORGANİZMALARDAN ENERJİ ÜRETİMİ: MİKROBİYAL YAKIT HÜCRELERİNİN TEMELLERİ VE UYGULAMALARI
Prof. Dr. Emine KÜÇÜKER Doç. Dr. Erdal AĞLAR	Siirt Üniversitesi, Van Yüzyüncü Yıl Üniversitesi,	Yeni Teknolojilerin Meyvecilikte Kullanımı: Verimlilik ve Kalite Artışı Sağlayan Yenilikçi Yaklaşımlar
Prof. Dr. Emine KÜÇÜKER Doç. Dr. Erdal AĞLAR	Siirt Üniversitesi, Van Yüzyüncü Yıl Üniversitesi	Türkiye İçin Modern Meyveciliğin Önemi
Nezira Meryem ASLANTAŞ Assoc. Prof. Dr. Ali Samet BABAOĞLU	Selcuk University,	BISPHENOL A AND CONSUMER SAFETY IN MEAT AND MEAT PRODUCTS
Ayfer ÖLMEZ Doç.Dr. Yasin ÜNAL	Isparta Uygulamalı Bilimler Üniversitesi	BEYPAZARI KAPAKLI WILDLIFE DEVELOPMENT AREA LARGE MAMMALS SPECIES
Zekiye Kocakaya, Mustafa Can Başbilen	Kayseri University,	HEAVY METAL DETERMINATION IN THE ATMOSPHERE USING LICHENS IN SOĞANLI VALLEY
Zekiye Kocakaya, Mehmet Ünsal Barak, Mustafa Kocakaya	Kayseri University, Yozgat Bozok University	PARMELIA SERRANA IN TÜRKİYE AND THE WORLD: SECOND RECORD AND HABITAT DIVERSITY IN TÜRKİYE



28.12.2024  
TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Dr. Öğr. Üyesi Ayşe KARADENİZ YILDIRIM

**SESSION-1 HALL-7**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Öğr. Üyesi Enes Kaya Dr. Öğr. Üyesi Nazmiye Ekinci	Kafkas Üniversitesi	TÜRKİYE'DE YER ALAN LİSANS SAĞLIK YÖNETİMİ BÖLÜMLERİNİN YÖNETİCİ AKADEMİSYEN PROFİLİ ÜZERİNE BİR İNCELEME
Dr. Öğr. Üyesi Enes Kaya Dr. Öğr. Üyesi Nazmiye Ekinci	Kafkas Üniversitesi	SAĞLIK YÖNETİMİ PERSPEKTİFİNDEN TÜRKİYE'DE SAĞLIK OTELCİLİĞİ HİZMETLERİNİN YÖNETİLMESİ
Arş. Gör. Merve ÇETİN Öğr. Gör. Dr. Ö. Koray YAYLACI Prof. Dr. Temel ÖZEK	Zonguldak Bülent Ecevit Üniversitesi, Anadolu Üniversitesi,	CAMPANULA KIRIKKALENSIS DÖNMEZ & GÜNER HERBA VE KÖK KISIMLARINDAN MİKROEKSTRAKSİYON YÖNTEMİYLE ELDE EDİLEN LİPİTLERİN PROFİLİ
Öğr. Gör. Özgenur GAVGALI	Ankara Üniversitesi, Karamanoğlu Mehmetbey	ARTIRILMIŞ GERÇEKLİK TEKNOLOJİSİ İLE TİNNİTUS YÖNETİMİ: LİTERATÜR TARAMASI
Prof. Dr. Ela TARAKCI Emine Kurbaloğlu	İstanbul Üniversitesi, İstanbul Bilgi Üniversitesi	AİLEVİ AKDENİZ ATEŞİ HASTALARININ FİZİKSEL AKTİVİTE DÜZEYLERİ VE EGZERSİZ ALIŞKANLIKLARININ İNCELENMESİ
Emine Dilek Kurbaloğlu Prof. Dr. Ela TARAKCI	İstanbul Bilgi Üniversitesi, İstanbul Üniversitesi	KAS-İSKELET AĞRISI OLAN ENGELLİ ÇOCUĞA SAHİP ANNELERDE GEVŞEME EGZERSİZLERİNİN ETKİLERİ
Dr. Öğr. Üyesi Ayşe KARADENİZ YILDIRIM	İstanbul Aydın Üniversitesi	OLINDA/EXM VE GATE MONTE CARLO SİMÜLASYON KARŞILAŞTIRILMASI : İYOD-131
Uzm. Dr. Selcen ÇAKMAK	Amasya Kolmed Hospital Psychiatry Unit, Amasya-Turkey	KARDİYOVASKÜLER HASTALIKLARDA DÜRTÜSELLİK KAVRAMININ PSİKOLOJİK İYİ OLUŞ ÜZERİNE ETKİSİ
Uzm. Dr. Selcen ÇAKMAK	Amasya Kolmed Hospital Psychiatry Unit, Amasya-Turkey	ANKSİYETE BOZUKLUKLARININ BİLİŞSEL DAVRANIŞÇI TERAPİSİNDE ARTIRILMIŞ GERÇEKLİK UYGULAMALARININ YERİ



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28.12.2024  
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**HEAD OF SESSION: Dr, Diren Ergin**

**SESSION-1 HALL-8**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Seda CİP, Rumeysa ŞENER, Ayşe ÇATALOLUK	Tokat Gaziosmanpaşa Üniversitesi,	DOĞUM SÜRECİNDE DESTEKLEYİCİ BAKIM VE EBELERİN ROLÜ
Rumeysa ŞENER, Seda CİP, Ayşe ÇATALOLUK	Tokat Gaziosmanpaşa Üniversitesi,	DOĞAL DOĞUM TEKNİKLERİ
Gülbahar ŞENCEL Ayşe ÇATALOLUK	Tokat Gaziosmanpaşa Üniversitesi	SEZARYEN ve SEZARYEN SONRASI VAJİNAL DOĞUM
Öğr. Gör. Dr, Diren Ergin	Altınbaş Üniversitesi,	CITRUS BERGAMIA RISSO ET POITEAU' NUN TIBBİ ÖNEMİ
Öğr. Gör. Dr, Diren Ergin	Altınbaş Üniversitesi,	ORİGANUM TÜRLERİNİN KOZMETİK KULLANIMI
Arş. Gör. Dr. Meliha Meliş GÜNALTAY Dr. Öğr. Üyesi Ferda IŞIKÇELİK	Çankırı Karatekin Üniversitesi, Burdur Mehmet Akif Ersoy Üniversitesi,	KİŞİ BAŞI GSYH'NİN ÖLÜM HIZLARI ÜZERİNDEKİ ETKİSİNİN İNCELENMESİ
Arş. Gör. Dr. Meliha Meliş GÜNALTAY Dr. Öğr. Üyesi Ferda IŞIKÇELİK	Çankırı Karatekin Üniversitesi, Burdur Mehmet Akif Ersoy Üniversitesi,	ANNE MORTALİTE PROJeksiYONLARI VE KARŞILANMAMIŞ SKH 3.1 HEDEFLERİ



28.12.2024  
TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Doç. Dr., Elvan Emine ATA

**SESSION-1 HALL-9**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doç. Dr. Semra KOCATAŞ, Gökçen UĞUZ	Sivas Cumhuriyet Üniversitesi,	DÜNYADA VE TÜRKİYE'DE SAĞLIĞI GELİŞTİREN HASTANE POLİTİKALARI
Elif SENA AKIN, ŞÜKRIYE YEŞİLOT	Burdur Mehmet Akif Ersoy University	POTENTIAL ADVERSE REACTIONS: DRUG USE AND INTERACTIONS IN INTENSIVE CARE UNIT
Elif SENA AKIN, ŞÜKRIYE YEŞİLOT	Burdur Mehmet Akif Ersoy University	PHARMACOVIGILANCE: THE KEY TO DRUG SAFETY
Phd Özlem GÜR Doç. Dr. Ayşe ÇİÇEK KORKMAZ	Bandırma On yedi Eylül Üniversitesi,	COVID-19 PANDEMİ SÜRECİNDE SAĞLIK ÇALIŞANLARINDA TÜKENMİŞLİK: 2020-2024 YILLARI ARASINDA YAPILAN ULUSAL ÇALIŞMALARIN İNCELENMESİ
Dr. Öğr. Üyesi Pınar KARA Prof. Dr. Evşen NAZİK	Kahramanmaraş İstiklal Üniversitesi, Çukurova Üniversitesi	PREEKLEMTİK GEBELERDE ANKSİYETE VE HEMŞİRELERİN SORUMLULUKLARI
Dr. Öğr. Üyesi Pınar KARA Prof. Dr. Evşen NAZİK	Kahramanmaraş İstiklal Üniversitesi, Çukurova Üniversitesi	SEZARYEN SONRASI AĞRI VE AĞRI YÖNETİMİNDE HEMŞİRELİK UYGULAMALARI
Doç. Dr., Elvan Emine ATA	Sağlık Bilimleri Üniversitesi,	İNTİHARI ÖNLEMENE YÖNELİK YAPILAN TEZLERİN İNCELENMESİ
Doç. Dr., Elvan Emine ATA	Sağlık Bilimleri Üniversitesi,	RUH SAĞLIĞI OKURYAZARLIĞI VE RUHSAL HASTALIKLARA YÖNELİK İNANÇLARIN İLİŞKİSİ
Ayşe Nur YILDIRIM, Busenur SEZER Doç. Dr. Esra PEHLİVAN	Sağlık Bilimleri Üniversitesi,	ONKOLOJİK TEDAVİ GÖREN AKCİĞER KANSERİ HASTALARINDA PULMONER REHABİLİTASYON VE EGZERSİZİN ETKİSİ
Busenur SEZER, Ayşe Nur YILDIRIM, Doç. Dr. Esra PEHLİVAN	Sağlık Bilimleri Üniversitesi,	OROFARENGEAL EGZERSİZLERİN OBSTRÜKTİF UYKU APNESİNDE ETKİNLİĞİ





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**HEAD OF SESSION:** Prof. Dr., Fatih KONAK

**SESSION-1 HALL-10**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Prof. Dr. Nusret GÖKSU, Küçük Ahmet GEDİK	Kahramanmaraş Sütçü İmam Üniversitesi,	DEVRE MÜLK / DEVRE TATİL ÜNİTELERİNİN SATIN ALMA ÖNCESİ VE SATIN ALMA SIRASINDA KİŞİLERİ ETKİLEYEN FAKTÖRLER ÜZERİNE BİR ARAŞTIRMA
Burak Karıcı, Ahmet Yasin Erten, Prof. Dr. Ufuk Cebeci	İstanbul Teknik Üniversitesi,	DİJİTAL İKİZ TEKNOLOJİSİ İLE SİSTEM OPTİMİZASYONU
Yüksek Lisans Öğrencisi Alı Sabeeh Majeed Alwindawı, Dr. Öğr. Üyesi Anıl Başaran	Yalova Üniversitesi	KRİPTO VARLIKLARIN NİTELİĞİ ÜZERİNE BİR TARTIŞMA: PARA MI DEĞER DEPOSU MU?
Doç. Dr. Safa HOŞ Doç. Dr. Oğuz Yusuf ATASEL	Hitit Üniversitesi, Trabzon Üniversitesi,	İŞLETME ALANINDA YAŞAM DÖNGÜSÜ DEĞERLENDİRMESİ (LCA): 1993-2024 DÖNEMİNDE BİR İNCELEME
Doç. Dr. Safa HOŞ Prof. Dr. Fatih KONAK	Hitit Üniversitesi,	PORTFÖY OPTİMİZASYONU ÇALIŞMALARI ÜZERİNE BİR İNCELEME
Doç. Dr., Yasin ŞEKER Prof. Dr., Fatih KONAK	Hitit Üniversitesi,	KÜRESEL EKONOMİDE ÇOK ULUSLU ŞİRKETLER: 1969-2024 YILLARI ARASI AKADEMİK BİR İNCELEME
Doç. Dr. Yasin ŞEKER Doç. Dr. Oğuz Yusuf ATASEL	Hitit Üniversitesi, Trabzon Üniversitesi,	SAHİPLİK YAPISININ FİRMA PERFORMANSI ÜZERİNDEKİ ROLÜ: 1973-2024 YILLARI ARASI BİR ARAŞTIRMA



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**HEAD OF SESSION: Dr. Öğr. Üyesi Hasan YAZICI**  
**SESSION-1 HALL-11**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doç. Dr. Aysel Kurnaz	Bandırma Onyedli Eylöl Üniversitesi,	TÜKETİM LİTERATÜRÜNÜN KAVRAMSAL YAPISININ ANALİZ EDİLMESİ
Gaffar Eser	Dicle Üniversitesi,	UZAKTAN EĞİTİM VE ALMS SİSTEMİ
İrem ARIKBAŞLI	Dicle Üniversitesi,	YENİ MEDYADA FİTRE BALONU VE YANKI ODASI: DİJİTAL ETKİLEŞİMİN SINIRLARI
Nadir Aksoy, Serdar Mencütekin	Buruciye Bilim ve Sanat Merkezi, Sivas,	“DOSTLARINI UNUTMAYAN HALK ŞAİRLERİ” DİJİTAL OYUNUNUN ADDIE TASARIM MODELİNE GÖRE GELİŞTİRİLMESİ
Süreyya AKSU	Bursa Teknik Üniversitesi	BİRLİKTE YÜKSELMEK; ROMAN BİREYLERİN TOPLUMA ENTEGRASYONU VE GELECEĞİ
Dr. Öğr. Üyesi Hasan YAZICI	Kocaeli Üniversitesi	GENÇ KIZLARIN EŞ SEÇİMİ
Öğr. Gör. Dr. Müge ATAKAN	Trakya Üniversitesi,	BULGARİSTAN’DA TÜRKÇE YAYINLANAN BİR DERGİ: MOZAIK (Şekil ve Muhteva Açısından İnceleme)
Filiz YAŞA	Dicle Üniversitesi,	SOSYAL MEDYA VE ÜNLÜ OLMA POPÜLERLİĞİNİN İNSAN DAVRANIŞLARINA VE TOPLUMSAL KÜLTÜRE ETKİSİ
Dr. Öğr. Üyesi Elif DEMİRBAŞ	Tarsus Üniversitesi,	SOSYAL HİZMET EĞİTİMİNDE YENİLİKÇİ YAKLAŞIMLAR



28.12.2024  
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**HEAD OF SESSION:** Dr. Öğr. Üyesi Melike YALÇIN

**SESSION-2 HALL-1**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Emre Şefik Çağlar Doç. Dr. Mehmet Evren Okur Prof. Dr. Neslihan Üstündağ Okur	Sağlık Bilimleri Üniversitesi,	DIABETES MELLITUS'UN TEDAVİSİNDE GELİŞTİRİLEN YENİ İLAÇ TAŞIYICI SİSTEMLER
Dr. Emre Şefik Çağlar Doç. Dr. Mehmet Evren Okur Prof. Dr. Neslihan Üstündağ Okur	Sağlık Bilimleri Üniversitesi,	MULTIPL MİYELOM İÇİN HEDEFE YÖNELİK İLAÇ DAĞITIM SİSTEMLERİNDEKİ SON GELİŞMELER
Öğr. Gör. Sevda AKTOKLU Öğr. Gör. Mustafa KIZILTAŞ Öğr. Gör. Tuğba KELEŞ REİS Öğr. Gör. Dilek ÖZULUS TÜZÜN	Avrasya Üniversitesi,	EĞİTİMDE AKRAN DESTEĞİ: SAĞLIK ÖĞRENCİLERİNİN BAŞARIDA YENİ YOL HARİTASI
Rukiye TEKDEMİR	Selcuk University	THE RELATIONSHIP BETWEEN DOMINANT POLARITY AND CHRONOTYPE IN BIPOLAR DISORDER PATIENTS IN REMISSION
Dr. Öğr. Üyesi Melike YALÇIN	Afyon Kocatepe Üniversitesi	NÖROÇEŞİTLİLİK VE SOSYAL HİZMET: KAPSAYICI YAKLAŞIMLAR VE UYGULAMALAR



28.12.2024  
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**HEAD OF SESSION:** Doç. Dr. Genç Osman GEÇER

**SESSION-2 HALL-2**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
NADA ZINE	Istanbul Aydın University, Istanbul, Turkey	EFFECTIVE STRATEGIES FOR VOCABULARY RETENTION IN SECOND LANGUAGE LEARNING AMONG TURKISH LEARNERS
Doç. Dr. Genç Osman GEÇER	Niğde ÖHÜ	İLERİ GAZETESİNİN “İSTANBULLUNUN DEFTERİ” KÖŞESİNDE YAYIMLANAN YAZILAR PEYAMİ SAFA’YA MI AİT?
Dr. Hüsem Korkmaz	Manisa Celal Bayar Üniversitesi,	BİR İŞ İNGİLİZCESİ DERS KİTABINDA KELİME DAĞARCIĞI KAPSAMI: İNGİLİZCE HAZIRLIK PROGRAMLARINDA ESP ÖĞRETİMİ İÇİN ÇIKARIMLAR
Dr. Deniz Yalçınkaya	Selcuk University	INNOVATIVE STRATEGIES IN LANGUAGE ASSESSMENT: MOBILE TOOLS AND GAMIFICATION
Öznur PEHLİVANLAR	İstanbul Aydın Üniversitesi,	İÇERİK VE DİL ENTEGRELİ ÖĞRENMENİN POTANSİYELİNİ AÇIĞA ÇIKARMAK
Lec. Ece DİLBER KARAYEL Prof. Dr. Eda ÜSTÜNEL	University of Turkish Aeronautical Association Vocational School of Aviation, Muğla Sıtkı Koçman University	A CONVERSATION ANALYTIC EXAMINATION OF THE ROLE OF ‘SO’ IN TASK-BASED, VIDEO- MEDIATED INTERACTION AMONG DYADS



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**HEAD OF SESSION: Prof. Dr. Kıvanç KAMBUROĞLU**  
**SESSION-2 HALL-3**

AUTHORS	AFFILIATION	TOPIC TITLE
Dr.Mohammad AMIRY Doç.Dr.Yaşar Mahsut DİNÇEL Dr.Fatih ERDOĞAN Dr.Burak Kaval Dr.Gündüz Ercan KUTLUAY	Tekirdağ Namık Kemal Üniversitesi	İZOLE ÖN ÇAPRAZ BAĞ REKONSTRÜKSİYONU VE ÖN ÇAPRAZ BAĞ REKONSTRÜKSİYONU İLE BİRLİKTE MENİSKÜS CERRAHİLERİ YAPILAN HASTALARIN KLİNİK SONUÇLARININ KARŞILAŞTIRILMASI
Doçent Doktor Melek Yakar	Eskişehir Osmangazi Üniversitesi,	EVALUATION OF DOSIMETRIC AND CLINICAL RESULTS IN SYNCHRONOUS BILATERAL BREAST RADIOTHERAPY: A SINGLE CENTER EXPERIENCE
Doçent Doktor Melek Yakar	Eskişehir Osmangazi Üniversitesi,	SENKRON BİLATERAL MEME RADYOTERAPİSİNDE DOZİMETRİK VE KLİNİK SONUÇLARIN DEĞERLENDİRİLMESİ: TEK MERKEZ DENEYİMİ
Prof. Dr. Kıvanç KAMBUROĞLU	Ankara University, Akhmet Yassewi International Kazakh Turkish University	ÇENELERDE GÖRÜLEN KISTLERE AĞIZ DIŞ VE ÇENE RADYOLOJİSİ AÇISINDAN BAKIŞ: VAKALAR VE KRİTİK ANALİZ
Prof. Dr. Kıvanç KAMBUROĞLU	Ankara University, Akhmet Yassewi International Kazakh Turkish University	ÇENELERİ ETKİLEYEN MALİGN LEZYONLARA AĞIZ DIŞ VE ÇENE RADYOLOJİSİ AÇISINDAN BAKIŞ
Uzm. Dt. Turkan MAHYADDINOVA	Alanya Ağız ve Diş Sağlığı Merkezi	ÇOCUK HASTADA BRUKSİZMİN ORAL BULGULARI VE MULTİDİSİPLİNER YAKLAŞIM: OLGU
Uzm. Dt. Turkan MAHYADDINOVA	Alanya Ağız ve Diş Sağlığı Merkezi	EKTODERMAL DİSPLAZİLİ ÇOCUK HASTANIN AĞIZ İÇİ BULGULARI: OLGU SUNUMU
Uzm.Dr., Muhammet Şahin ELBASTI	Elazığ Medikal Hospital,	ANKİLOZAN SPONDİLİT'Lİ HASTALARDA NÖROPATİK AĞRI VE İLİŞKİLİ FAKTÖRLERİN İNCELENMESİ



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**HEAD OF SESSION:** Doç. Dr. Hakan Tahiri MUTLU

**SESSION-2 HALL-4**

AUTHORS	AFFILIATION	TOPIC TITLE
Prof. Dr. Murat ÇETİN Doktora Öğrencisi Uğur ÇINAR Dr. Aycan CAN	Tekirdağ Namık Kemal Üniversitesi, İstanbul Okan Üniversitesi,	SEÇİLMİŞ OECD ÜLKELERİNDE ÇEVRE KİRLİLİĞİNİN BELİRLEYİCİLERİ ÜZERİNE BİR ARAŞTIRMA
Prof. Dr. Murat ÇETİN Dr. Aycan CAN Doktora Öğrencisi Uğur ÇINAR	Tekirdağ Namık Kemal Üniversitesi, İstanbul Okan Üniversitesi,	TÜRKİYE'DE KADIN İŞGÜCÜ VE KADIN EĞİTİM DÜZEYİNİN EKONOMİK BÜYÜMEYE ETKİSİ
Dr. Öğr. Üyesi Mehmet Fatih KANOĞLU Dr. Öğr. Görevlisi Hasan Saltuk DURAK Doç. Dr. Hakan Tahiri MUTLU	Yozgat Bozok Üniversitesi, Düzce Üniversitesi, Bolu Abant İzzet Baysal Üniversitesi,	SOSYAL ÇÜRÜMÜŞLÜK ÖLÇEĞİ GELİŞTİRME ÇALIŞMASI
Dr. Öğr. Görevlisi Hasan Saltuk DURAK Dr. Öğr. Üyesi Mehmet Fatih KANOĞLU Doç. Dr. Hakan Tahiri MUTLU	Düzce Üniversitesi, Yozgat Bozok Üniversitesi, Bolu Abant İzzet Baysal Üniversitesi,	SOSYAL AĞ YORGUNLUĞU ÖLÇEĞİ GELİŞTİRME ÇALIŞMASI
Öğr. Gör. Dr., Bahrialp Tural	Tokat Gaziosmanpaşa Üniversitesi,	İHTİYAÇ KAVRAMININ YENİDEN TANIMLANMASI BAĞLAMINDA PAYLAŞIM EKONOMİSİ VE VİRAL PAZARLAMA “TÜKETİCİ DENEYİMLERİ ÖRNEKLERİ”
Hüseyin Elcuman, Dr. Öğr. Üyesi Mehmet Ali Ergün	İstanbul Teknik Üniversitesi,	HİSSE SENEDİ FİYATI DEĞİŞİMİNİ TAHMİNİ İÇİN TEKNİK GÖSTERGELER VE LSTM, Bİ- LSTM, GRU VE TRANSFORMER MODELLERİ KULLANILARAK KARŞILAŞTIRMALI ANALİZ
Sümeyya BAYRAKÇEKEN	Nevşehir Hacı Bektaş Veli Üniversitesi,	TEKNOSTRES VE ÖRGÜTSEL YABANCILAŞMA ÜZERİNE BİR ARAŞTIRMA
Seval YILMAZ Prof. Dr. Hakan KİTAPÇI	Gebze Teknik Üniversitesi	PATENT TETİKLEYİCİLERİN PATENT VERİ TABANI KULLANIMI DAVRANIŞI VE YENİ ÜRÜN GELİŞTİRMEYE ETKİSİ
Şeyma Ünal	Ankara Yıldırım Beyazıt Üniversitesi	MADDİ VARLIKLARIN ULUSLARARASI MUHASEBE STANDARTLARINA GÖRE DEĞERLENDİRMESİ VE FİNANSAL TABLOLAR ÜZERİNDEKİ ETKİLERİ NELERDİR? BİR İNCELEME ANALİZİ





6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

28.12.2024

TÜRKİYE Local Time: 14:00-16:00

**HEAD OF SESSION:** Dr. Öğr. Üy. Cenap Yılmaz

**SESSION-2 HALL-5**

AUTHORS	AFFILIATION	TOPIC TITLE
Prof. Dr. Alaeddin BOBAT Araş. Gör. Sümeyye BAYRAM	Kocaeli Üniversitesi,	ÇAM KESE BÖCEĞİ [THAUMETOPOEA PITYOCAMPA (DENIS & SCHIFFERMÜLLER, 1775) (LEPIDOPTERA: THAUMETOPOEIDAE)] TANIMI, BİYOLOJİSİ VE MÜCADELESİ
Hasan Ali DEMİR Prof. Dr. Derya EŞEN	İzmir Orman Bölge Müdürlüğü, İzmir Kâtip Çelebi Üniversitesi,	KIZILÇAM (PİNUS BRUTIA TEN.) VE SAHİL ÇAMI (PİNUS PINASTER AİTON) AĞAÇLANDIRMALARININ BAŞLANGIÇ PERFORMANSI (İZMİR-BUCA)
Saadet Gözde KORKMAZ Prof. Dr. Mahmut OK	Selçuk Üniversitesi,	GİNGİVOSTOMATİTİSLİ KEDİLERDE ENDOTEL HASARIN BELİRLEMESİNDE SEÇİLMİŞ ENDOTEL HASAR BİYOBELİRTEÇLERİNİN DEĞERLENDİRİLMESİ
Dr. Öğr. Üy. Cenap Yılmaz	Eskişehir Osmangazi Üniversitesi,	BAZI NAR ÇEŞİT VE GENOTİPLERİNİN TOHUM VE ÇİMLENME ÖZELLİKLERİ
Dr. Öğr. Üy. Cenap Yılmaz	Eskişehir Osmangazi Üniversitesi,	WONDERFUL VE TÜRKMEN NAR ÇEŞİTLERİNİN MERSİN- ERDEMLİ EKOLOJİK KOŞULLARINDAKİ PERFORMANSLARI
Sarah M.S. Alsallameh, Hamzah Abdulrahman Salman, Doç. Dr. Özgür KUZUKIRAN	Ministry of Higher Education and Scientific Research, Middle Technical University, Baghdad, Iraq Çankırı Karatekin Üniversitesi	İDRAR YOLLARI ENFEKSİYONU GÖSTERGESİ: IL-6 VE IL-8
Meryem Toprak Doç. Dr. Özgür KUZUKIRAN	Fırat Üniversitesi, Çankırı Karatekin Üniversitesi,	SU ÜRÜNLERİ YETİŞTİRİCİLİĞİNDE NANOPARTİKÜL UYGULAMALARI



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

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**HEAD OF SESSION** Dr. Deniz Güçlü

**SESSION-2 HALL-6**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Öğr. Üyesi Ahmet Aslan, Doç. Dr. Ayhan Karakaş, Ayşenur Sivacı	Bartın Üniversitesi	OTEL YÖNETİCİLERİNİN HELAL TURİZME BAKIŞ AÇILARININ BELİRLENMESİ
Doç. Dr. Ayhan Karakaş, Dr. Öğr. Üyesi Ahmet Aslan	Bartın Üniversitesi	TURİZM İŞLETMELERİNİN COVID-19 SALGINI DÖNEMİNDE UYGULADIKLARI PAZARLAMA STRATEJİLERİ
Mert ERSÖZ, Selim HARTOMACIOĞLU	Marmara University	INVESTIGATION AND OPTIMIZATION OF RELATIVE DENSITY IN TPU MATERIAL PRODUCED BY FDM METHOD
Öğr. Gör. Dr. Deniz Güçlü	Kocaeli Üniversitesi,	AMBROSIA'DAN LOTUS'A: MİTOLOJİK BİTKİLERİN KÜLTÜREL VE SPİRİTÜEL YOLCULUĞU
Elif Nezihe İŞIKHAN Dr. Zehra YARDI	İstanbul Aydın Üniversitesi,	TÜRKİYE'DE YÖRESEL MUTFAK ÜZERİNE YAZILMIŞ AKADEMİK TEZLERİN İÇERİK ANALİZİ



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**HEAD OF SESSION:** Doç. Dr. Pelin Avcı

**SESSION-2 HALL-7**

AUTHORS	AFFILIATION	TOPIC TITLE
Doç.Dr. Pelin Avcı	Dokuz Eylül Üniversitesi	PARİS OLİMPİYATLARI AÇILIŞ TÖRENİ: SEMBOİZMİN GÖLGESİNDEKİ SKANDALLAR VE SEYİRCİ TEPKİLERİ
Doç.Dr. Pelin Avcı Dr. Öğretim Üyesi İpek Aydın	Dokuz Eylül Üniversitesi	SAĞLIK UZMANLARININ BAKIŞ AÇISIYLA YEŞİL EGZERSİZ: YOUTUBE ANALİZİ ÖRNEĞİ
Arş. Gör. Nazlıcan TAŞTAN Doç. Dr. Cüneyt TAŞKIN Arş. Gör. Berkant AYDEMİR Dr. Öğr. Üyesi Gamze Yıldırım ARAZ	Trakya Üniversitesi	MİLLİ EĞİTİME BAĞLI ÖZEL ORTAOKUL ÖĞRENCİLERİNİN REKREATİF FAALİYETLER HAKKINDAKİ GÖRÜŞLERİNİN İNCELENMESİ (EDİRNE İLİ ÖRNEĞİ)
Dr. Öğr. Üyesi Gamze Yıldırım ARAZ Arş. Gör. Berkant AYDEMİR Doç. Dr. Cüneyt TAŞKIN Arş. Gör. Nazlıcan TAŞTAN	Trakya Üniversitesi	SALDIRGANLIK EĞİLİMİNİN FARKLI DEĞİŞKENLER AÇISINDAN İNCELENMESİ
Arş. Gör. Berkant AYDEMİR Arş. Gör. Nazlıcan TAŞTAN Dr. Öğr. Üyesi Gamze Yıldırım ARAZ Doç. Dr. Cüneyt TAŞKIN	Trakya Üniversitesi	ÖĞRETMEN ADAYI DİJİTAL YETERLİK ALGISI ÖLÇEĞİNİN SPOR BİLİMLERİ EVRENİNE UYARLAMA ÇALIŞMASI
Doç. Dr. Cüneyt TAŞKIN Dr. Öğr. Üyesi Gamze Yıldırım ARAZ Arş. Gör. Nazlıcan TAŞTAN Arş. Gör. Berkant AYDEMİR	Trakya Üniversitesi	YIKICI LİDERLİK ÖLÇEĞİ'NİN BEDEN EĞİTİMİ VE SPOR EVRENİNE UYARLAMA ÇALIŞMASI
Fatma Sezer, Duran Akbaş, Prof. Dr. Işık Bayraktar	Gençlik ve Spor İl Müdürlüğü, Manisa, Alanya Alaaddin Keykubat Üniversitesi,	OLİMPİYAT OYUNLARINDA (2008-2024) MADALYA KAZANAN ÜLKELERİN UCI ÜLKE PUAN SIRALAMASINA GÖRE GELİŞİMLERİNİN İNCELENMESİ



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**HEAD OF SESSION:** Prof. Dr. Süreyya Karsu

**SESSION-2 HALL-8**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doktor Öğretim Üyesi Hüseyin Tamer	Sakarya Uygulamalı Bilimler Üniversitesi,	ANONİM ŞİRKETLERDE GENEL KURUL KARARLARININ GEÇERSİZLİĞİ ÜZERİNE DÜŞÜNCELER
Doktor Öğretim Üyesi Hüseyin Tamer	Sakarya Uygulamalı Bilimler Üniversitesi,	ŞİRKETLER HUKUKU YÖNÜNDEN SÜRDÜRÜLEBİLİRLİĞE İLİŞKİN ULUSAL VE ULUSLARARASI GELİŞMELERİN DEĞERLENDİRİLMESİ
Lisansüstü Öğrenci, Hatice Gamze Örs	KTO Karatay Üniversitesi,	ULUSLARARASI TİCARETTE HİZMET İHRACATI
Prof. Dr. Süreyya Karsu	Bolu Abant İzzet Baysal Üniversitesi,	SÜRDÜRÜLEBİLİR ENERJİ YENİLİĞİ: HİDROJEN ENERJİSİ
Prof. Dr. Süreyya Karsu Dr.Öğr. Üyesi Seda Uğur Çilkara	Bolu Abant İzzet Baysal Üniversitesi, Zonguldak Bülent Ecevit Üniversitesi,	TABİATIN KALBİNDE SÜRDÜRÜLEBİLİR DESTİNASYON: GÖLCÜK
Nuray TÜLEK	Dokuz Eylül Üniversitesi	2020/4 SAYILI BANKALARCA TİCARİ MÜŞTERİLERDEN ALINABİLECEK ÜCRETLERE İLİŞKİN USUL VE ESASLAR HAKKINDA TEBLİĞ'İN DEĞERLENDİRİLMESİ
Doç. Dr. Adem YILMAZ	Batman Üniversitesi	BATMAN İLİNİN ÇÖP ATIKLARININ GERİ DÖNÜŞÜMÜ VE BİYOGAZ ÜRETİMİ



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**HEAD OF SESSION: Dr., Cihan ÖZAYKAN**

**SESSION-2 HALL-9**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr., Cihan ÖZAYKAN	Bartın Üniversitesi,	ZÂT-SIFAT PROBLEMİNDE MU‘TEZİLE VE EŞ‘ARÎYYE’NİN MÜŞTEREK KAYNAĞI VE UZLAŞIMIN YOLU
Dr.Öğr.Üyesi, Aliye YILMAZ Yüksek Lisans Öğr., Tahsin İNCE	SDÜ,	ALİ ŞİR NEVAİ’NİN KÜLTÜRLER ARASI ETKİLEŞİMDEKİ ROLÜ
Yasin ÖNCEL	İstanbul Aydın Üniversitesi,	SAİT FAİK ABASIYANIK’IN HALLAÇ HİKÂYESİNDE BAĞDAŞIKLIK VE TUTARLILIK GÖRÜNÜMLERİ
Arş. Gör. Gülsu ÇİVRİL	Dokuz Eylül Üniversitesi,	JEAN-PAUL SARTRE’İN FELSEFESİNDE BİLİNÇ VE YÖNELİMSELLİK
Assistant Professor Mustafa Cabir ALTINTAŞ	Şırnak University	MULTICULTURALISM AND INTERCULTURALITY IN RELIGION AND EDUCATION: THE CASE OF TURKEY



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

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**HEAD OF SESSION: Dr. Öğr. Üyesi, Doruk AYBERKİN**

**SESSION-2 HALL-10**

AUTHORS	AFFILIATION	TOPIC TITLE
Assistant Prof. Dr. Abdelkader Ghazal Assistant Prof. Dr. Mussaab Alshbib Assistant Prof. Dr. Sohayb Abdulkerim	Aleppo University, Suriye Gaziantep University	SENSORLESS SPEED TECHNIQUES OF STEPPER MOTOR STATE OF ART
Dr. Öğr. Üyesi Sena KABAVE KILINÇARSLAN Dr. Öğr. Üyesi M. Salih GÜL Enes KILINÇARSLAN	Karabük Üniversitesi,	MELAMİNİN İLERİ DÖNÜŞÜMÜ İLE NANO PARTİKÜL ÜRETİMİ
Dr. Öğr. Üyesi, Emrah Kantaroğlu Yüksek Lisans Öğrencisi, Ali Yılmaz	Kırıkkale Üniversitesi,	TİCARİ BUJİ ATEŞLEMELİ BİR MOTORDA BENZİN-KEROSEN KARIŞIMLARINDA DEĞİŞEN ATEŞLEME AVANSININ MOTOR PERFORMANSINA ETKİLERİ
Dr. Buket TURGUT Dr. Nurullah GÜLTEKİN Dr. Mithat ŞİMŞEK	Tokat Gaziosmanpaşa University	EXPERIMENTAL ANALYSIS OF THE INFLUENCE OF THE FILLING RATIO OF RADIAL SLIDING BEARINGS FABRICATED FROM PLA BY 3D PRINTING ON THE FRICTION COEFFICIENT, VIBRATION, AND NOISE LEVELS
Tolga YILMAZ Doç Dr. Yakup KARAKOYUN	Yüzüncü Yıl Üniversitesi	MAKİNE ÖĞRENMESİ İLE ÇATI ÜSTÜ GÜNEŞ ENERJİSİ POTANSİYELİNİN UYGULANABİLİRLİK ANALİZİ
Dr. Öğr. Üyesi Mustafa Timur	Adnan Menderes Üniversitesi	YÜKSEK KONTAK TEMAS ORANLARININ SİLİNDİRİK DİŞLİLERDE UYGULANABİLİRLİĞİNİN ARAŞTIRILMASI
E.Cevik and Y.Sun	Karabük Üniversitesi,	AA1050-XMg/B 4 C KOMPOZİTLERİN TERMAL GENLEŞME ÖZELLİKLERİNİN İNCELENMESİ
E.Cevik and Y.Sun	Karabük Üniversitesi,	AlSi12-XMg/B 4 C KOMPOZİTLERİN POTANSİYODİNAMİK POLARİZASYON TEST SONUÇLARININ DEĞERLENDİRİLMESİ
Dr. Öğr. Üyesi, Doruk AYBERKİN	Bayburt Üniversitesi	ELEKTRİKLİ ARAÇ AKÜLERİNİN GERİ DÖNÜŞÜMÜ VE İKİNCİL ÖMRÜ: BLOCKCHAIN TABANLI BİR SÜREÇ İZLEME MODELİ ÖNERİSİ
Çağatay TEKE, Ozan SAĞLAM	Bayburt University	CLASSIFICATION OF FAILURES IN A PRODUCTION PLANT WITH PARETO ANALYSIS





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**HEAD OF SESSION:** Dr. Öğr. Üyesi İsmail Hakkı Parlak

**SESSION-2 HALL-11**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Öğr. Üyesi Ekrem Bahadır Çalışkan Doç. Dr. Filiz Karakuş	Ankara Yıldırım Beyazıt Üniversitesi	YAPAY ZEKA UYGULAMALARININ MEVZUAT ANALİZİNDEKİ POTANSİYELİ: CHATGPT ÖRNEĞİ
Dr. Öğr. Üyesi İsmail Hakkı Parlak	Bolu Abant İzzet Baysal Üniversitesi	BANSURI TRANSPOSER: BANSURI'DE KOLAY TRANSPOZİSYON İÇİN BİR MOBİL UYGULAMA
Dr. Öğr. Üyesi, Hasan GÜLER Doç. Dr., M. Veysel ÇAKIR	Kilis 7 Aralık University,	KÜÇÜK DELİK EDM SÜRECİNDE MRR PERFORMANSI İÇİN BİR ARAMA ALGORİTMASI KULLANILARAK OPTİMUM ANFİS MODELİNİN BELİRLENMESİ
Dr. Öğr. Üyesi, Hasan GÜLER Doç. Dr., Rasim ÖZDEMİR	Kilis 7 Aralık University	MAKİNE ÖĞRENİM YÖNTEMLERİYLE BAKIR - ÇİNKO İNCE FİLMLEİN ELEKTRİKSEL ÖZDİRENÇLERİNİN YORDANMASI
Baransel Zöngör, Murat Sağlam, Tunahan Gökçe, Rüya Şamlı	AloTech Bilişim İstanbul Üniversitesi	YAPAY ZEKA ALGORİTMALARI KULLANILARAK ÇAĞRI MERKEZLERİNDEKİ MÜŞTERİ SORUNLARININ KATEGORİZASYONU
Dr. Öğr. Üyesi, Burhan DUMAN	Isparta Uygulamalı Bilimler Üniversitesi,	PAVECRACK VE EGGCRACK VERİ SETLERİ İLE İKİLİ SINIFLANDIRMA VE NESNE TESPİTİ MODELLERİNİN KARŞILAŞTIRMALI PERFORMANS ANALİZİ
Duygu Özdemir, Emine Akgül Sezgin, Aysun Karul	İstinye Üniversitesi, Sakarya Üniversitesi,	DİJİTAL SAĞLIK UYGULAMALARI: MLP ONLINE UZAKTAN SAĞLIK HİZMETİ
Serhat Özkoyuncu Dr. Öğr. Üyesi Osman Tayfun Bişkin	Burdur Mehmet Akif Ersoy Üniversitesi,	UZAK ALGILAMA GÖRÜNTÜLERİNDE YOLO TABANLI DERİN ÖĞRENME MİMARİSİ İLE ASKERİ UÇAKLARIN TESPİTİ VE SINIFLANDIRILMASI



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**HEAD OF SESSION:** Prof. Dr. Bahattin DEMİRTAŞ

**SESSION-1 HALL-1**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Hasret DEMİRBAŞ	Bursa Teknik Üniversitesi,	2018 VE 2023 CUMHURBAŞKANLIĞI SEÇİMLERİ: TOPLUMUN SİYASAL EĞİMLERİNİ BELİRLEYEN DİNAMİKLER ÜZERİNE SOSYOPOLİTİK BİR ANALİZ
Dr. Öğr. Ü. Cem ANGIN	Ordu Üniversitesi,	KAMU YARARI KAVRAMININ YENİDEN İNŞASI: İÇERİK ANALİZİNE DAYALI BİR İNCELEME
Dr. Öğr. Üyesi Demet DEMİR ŞAHİN Öğr. Gör Fatma DOĞANAY	Gümüşhane Üniversite	GEÇMİŞ MADEN İŞ KAZALARININ VERDİĞİ DERSLER VE SONRASI
Prof. Dr. Bahattin DEMİRTAŞ	Ankara Hacı Bayram Veli Üniversitesi,	BAŞBAKAN SÜLEYMAN DEMİREL'İN 1967 SSCB GEZİSİ VE TÜRK-SOYVET İLİŞKİLERİNE YANSIMALARI
Prof. Dr. Bahattin DEMİRTAŞ	Ankara Hacı Bayram Veli Üniversitesi,	DOĞU BLOKU'NUN ÖZERK BİR ÜLKESİ ROMANYA VE CUMHURBAŞKANI NİCOLAE CEAUSESCU'NUN 1976 TÜRKİYE ZİYARETİ
Ars. Gör., Jale KAHRAMAN Dr. Öğr. Üyesi, Sultan GEDİK GÖÇER	Kocaeli Üniversitesi, İstanbul Esenyurt Üniversitesi	HAVACILIK SEKTÖRÜ ULAŞTIRMA POLİTİKALARI
Tarık MİLDAN Dr. Öğr. Üyesi Sultan GEDİK	Kocaeli Üniversitesi,	SİVİL HAVACILIK SEKTÖRÜNDE DİJİTALLEŞMENİN EKONOMİK ETKİLERİ



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**HEAD OF SESSION:** Prof. Dr. Akın AZİZOĞLU

**SESSION-1 HALL-2**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Prof. Dr. Baki Çiçek Lecturer Dr. Ümit Çalşır	Balıkesir University, Siirt University	2-AMİNOTİYOFENOL SÜBSTİTÜE ÇOK DUVARLI KARBON NANOTÜPLERİN SENTEZİ VE KARAKTERİZASYONU
Lecturer Dr. Ümit Çalşır Prof. Dr. Baki Çiçek	Balıkesir University, Siirt University	AZOMETİN YİLÜRLER ÜZERİNDEN KARBON NANOTÜPLERİN 1,3-DİPOLAR SİKLOKATILMA REAKSİYONLARININ İNCELENMESİ VE KARAKTERİZASYONU
Assist. Prof. Dr. Ahmet Turan TEKEŞ Ph.D. Stu. Ashhan Aycan TANRIVERDİ Assoc. Prof. Dr. Ümit YILDIKO	Kafkas University	COMPREHENSIVE DFT-BASED QUANTUM CHEMICAL INVESTIGATION OF THE DCPO COMPOUND FOR STRUCTURAL PROPERTIES
Doç. Dr. Zeynep Şilan TURHAN	Iğdır Üniversitesi,	S-TRİAZİN GRUPLARI İÇEREN POTANSİYEL TADF YAPILARI
Prof. Dr. Akın AZİZOĞLU	Balıkesir Üniversitesi	OKSADİAZOL ESASLI YÜKSEK ENERJİLİ MALZEMELER ÜZERİNE HESAPLAMALI ÇALIŞMALAR
Prof. Dr. Akın AZİZOĞLU, Bilge ÇİRNAL MENEKŞE	Balıkesir Üniversitesi	BAZI NİTROAROMATİK BİLEŞİKLERİN WİBERG BAĞ İNDEKSLERİNİN BELİRLENMESİ VE TETİK BAĞ ANALİZLERİ
Dr. Öğretim Üyesi Oya Cengiz	Süleyman Demirel Üniversitesi,	YAYLAKÖY BENTONİTİNİN MİNERALOJİK- JEOKİMYASAL ÖZELLİKLERİNİN VE ENDÜSTRİYEL KULLANIMININ İNCELENMESİ, MANİSA, TÜRKİYE
Assist. Prof. Dr.. Ahmet Turan TEKEŞ Ph.D Stu.Ashhan Aycan TANRIVERDİ Assoc. Prof. Dr. Ümit YILDIKO	Kafkas University	ELECTRONIC PROPERTIES AND THEORETICAL STUDY OF ADTP COMPOUND: INSIGHTS INTO STABILITY, REACTIVITY, AND STRUCTURAL FEATURES



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**HEAD OF SESSION:** Prof. Dr. Sibel ECEMİŞ KILIÇ

**SESSION-1 HALL-3**

AUTHORS	AFFILIATION	TOPIC TITLE
Arş. Gör.,Ayşe Şahiner Tufan Arş. Gör. Selver KOÇ ALTUNTAŞ	Karadeniz Teknik Üniversitesi	İYİLEŞTİREN ÇEVRE BAĞLAMINDA DOĞA: ONKOLOJİ MERKEZLERİNE YENİ BİR BAKIŞ
Öğr. Gör. Dr. FIRAT KIPÇAK	Van Yüzüncü Yıl Üniversitesi	BETON VE ÇELİK MALZEMELERİN ABAQUS YAZILIMINDA DOĞRUSAL VE DOĞRUSAL OLMAYAN ÖZELLİKLERİNİN TANIMLANMASI
Cenk FİDAN, Doç. Dr. Ebru ARIKAN ÖZTÜRK	Gazi Üniversitesi,	AKILLI KAVŞAK KONTROL SİSTEMİ UYGULAMALARI ANKARA ÖRNEĞİ
Prof. Dr. Sibel ECEMİŞ KILIÇ	Dokuz Eylül Üniversitesi	TÜRKİYE'DE KÜLTÜREL MİRASIN KORUNMASI VE KORUMA AMAÇLI İMAR PLANLARINA İLİŞKİN MEVCUT DURUM VE SORUNLAR
Dr. Öğr. Üyesi Mehmet Eyyüp KAVŞUT	Osmaniye Korkut Ata Üniversitesi,	HİDROELEKTRİK ENERJİNİN SU AYAK İZİ: MEVCUT DURUM VE GELECEK PERSPEKTİFLERİ
Lisansüstü Öğrenci Öznur YAYILKAN Dr. Öğr. Üyesi Mehmet Fethi ERTENLİ	ESTP Paris, İnşaat Mühendisliği Üniversitesi, Fransa, Karabük Üniversitesi	BİNALARDAKİ RÜZGÂR ETKİLERİNİN EUROCODE VE ASCE 7 KAPSAMINDA KARŞILAŞTIRMALI ANALİZİ
Lisansüstü Öğrenci Seda DÜNDAR Dr. Öğr. Üyesi Mehmet Fethi ERTENLİ	Karabük Üniversitesi,	PASLANMAZ ÇELİKLERİN İNŞAAT SEKTÖRÜNDEKİ KULLANIM POTANSİYELİ: YAPISAL SİSTEMLERDEKİ SINIRLAMALAR VE AŞINMA DAVRANIŞI ÜZERİNE BİR DEĞERLENDİRME
Doç. Dr. Ömer Saltuk Bölükbaşı	İskenderun Teknik Üniversitesi	ENRICHMENT OF FELDSPAR ORE
Doç. Dr. Ömer Saltuk Bölükbaşı M.Sc. Kemal Tahir ÖNGÜ	İskenderun Teknik Üniversitesi, İskenderun Teknik Üniversitesi,	İKLİMSEL OLAYLARIN ÇELİKHANE CÜRUFU KATKILI BETON(HARÇ) NUMUNELERİ ÜZERİNDE KARBONATLAŞMA ETKİSİNİN ARAŞTIRILMASI
Assist. Prof. Dr. Mine SUNGUR	Selcuk University	COLLABORATIVE LEARNING METHOD IN INTERIOR DESIGN EDUCATION; OFFICE AND CONSTRUCTION SITE INTERNSHIP COURSE EXPERIENCE
Salman Alkhalifa, Engin KOCAMAN	Zonguldak Bülent Ecevit Üniversitesi,	CuZn32 ALAŞIMINA İLAVE EDİLEN SİLİSYUMUN MİKROYAPI, SERTLİK VE KOROZYON ÜZERİNDEKİ ETKİSİ
Seda Eraslan Kilci, Doç. Dr. Murat Çağlar Baydoğan	Erciyes Üniversitesi,	KENTSEL VE MİMARİ MEKÂN POTANSİYELLERİNİN KULLANILMASI ÜZERİNE: YENİ MEDYA SANATI



29.12.2024  
TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Doç. Dr. Hafize ER TÜRKÜRESİN

**SESSION-1 HALL-4**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doç. Dr. Hafize ER TÜRKÜRESİN	Dumlupınar Üniversitesi	2018 SOSYAL BİLGİLER ÖĞRETİM PROGRAMI İLE 2024 TÜRKİYE YÜZYILI MAARİF MODELİ SOSYAL BİLGİLER ÖĞRETİM PROGRAMLARININ KARŞILAŞTIRILMASI
Doç. Dr. Hafize ER TÜRKÜRESİN	Dumlupınar Üniversitesi	SOSYAL BİLGİLER ÖĞRETİMİNDE WEB 2.0 ARAÇLARI KULLANIMI VE UYGULAMA ÖRNEKLERİ
Barış TAŞÇI	Dicle Üniversitesi	SOSYAL MEDYA AĞLARI ÜZERİNDEN EĞİTİM
Öğretmen Büşra Tunç Dr. Öğr. Üyesi Güliz KAYMAKCI	Tokat Gaziosmanpa Üniversitesi	ÖZEL YETENEKLİ ÖĞRENCİLERİN DOWN SENDROMLU BİREYLER İÇİN OLUŞTURDUKLARI METAFORİK ALGILAR
Assoc. Prof. Dr. Gonca SUBAŞI	Anadolu University,	INVESTIGATING BURNOUT LEVELS AMONG PRIMARY SCHOOL EFL TEACHERS: AN EXPLANATORY STUDY IN ESKİŞEHİR
Assoc. Prof. Dr. Gonca SUBAŞI	Anadolu University,	THE IMPLEMENTATION OF DYNAMIC ASSESSMENT (DA) IN PROCESS-GENRE APPROACH WHEN TEACHING L2 WRITING
Dr. Öğr. Üyesi Serap ÖZDEMİR BİŞKİN	Mehmet Akif Ersoy Üniversitesi	ERGENLERİN ANNE VE BABAYA YÖNELİK ŞİDDET DAVRANIŞLARINA İLİŞKİN ALGILARININ BELİRLENMESİ
Doç. Dr. Gökhan Kayır	Manisa Celal Bayar Üniversitesi,	ALMANYA'DA 0-6 YAŞ ARASI ÇOCUK SAHİBİ GÖÇMEN KADINLARIN ANNELİK VE SOSYAL UYUM DENEYİMLERİ
Öğretmen Zeynep YALÇIN Doç. Dr. Ebru EZBERCİ ÇEVİK	Milli Eğitim Bakanlığı, Erciyes Üniversitesi	5. SINIF FEN BİLİMLERİ DERS KİTABININ (2024) OKUNABİLİRLİK AÇISINDAN İNCELENMESİ
Melisa MART Doç. Dr. Ebru EZBERCİ ÇEVİK	Erciyes Üniversitesi,	5. SINIF FEN BİLİMLERİ DERS KİTABININ (2024) YENİLENMİŞ BLOOM TAKSONOMİSİ AÇISINDAN İNCELENMESİ



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

29.12.2024

TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Doç. Dr. Hamza ÜSTÜN

**SESSION-1 HALL-5**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Öğr. Üyesi, Hüseyin ÇEVİK	Zonguldak Bülent Ecevit Üniversitesi	EĞİTİM FAKÜLTESİ ÖĞRENCİLERİNİN DİJİTAL OYUN DAVRANIŞLARI VE ALIŞKANLIKLARININ İNCELENMESİ
Dr. Öğr. Üyesi, Hüseyin ÇEVİK	Zonguldak Bülent Ecevit Üniversitesi	SINIF DÜZENİ VE MATERYAL KULLANIMININ DERS İŞLEYİŞİNE KATKISI: ÖĞRETMEN PERSPEKTİFİNDEN BİR DEĞERLENDİRME
Doç.Dr. Gökçen ÇATLI Serap HACIHASANOĞLU ÖNCEL	İstanbul Aydın Üniversitesi	ERGENLİK DÖNEMİ ÇOCUKLARIN UYUM VE DAVRANIŞ PROBLEMLERİYLE BAŞA ÇIKMADA ORTAK EBEVEYNLİK DAVRANIŞININ İNCELENMESİ
Doç. Dr. Hamza ÜSTÜN	Tokat Gaziosmanpaşa Üniversitesi,	MÜZİK ÖĞRETMENİ ADAYLARININ AKADEMİK ERTELEME DAVRANIŞLARI
Doç. Dr. Hamza ÜSTÜN	Tokat Gaziosmanpaşa Üniversitesi,	ARBAN TROMPET METODUNA YÖNELİK İÇERİK ANALİZİ
Arş. Gör. Dr. Merve Nihan ERTEKİN KAYA	Gaziosmanpaşa Üniversitesi,	KLASİK GİTAR EĞİTİMİ METODU DELCAMP VOLUME 1'İN İNCELENMESİ
Arş. Gör. Dr. Merve Nihan ERTEKİN KAYA	Gaziosmanpaşa Üniversitesi,	MÜZİK EĞİTİMİNDE KARMA YÖNTEM KULLANAN LİSANSÜSTÜ ARAŞTIRMALARA GENEL BİR BAKIŞ
Yüksek Lisans Öğrencisi, İlyada ALTINOK Doçent, Bahadır ÇOKAMAY	Çanakkale Onsekiz Mart Üniversitesi,	PİYANO EĞİTİMİNE YÖNELİK BİR ETÜT ANALİZİ ÖRNEĞİ: CARL CZERNY OP.849 ETÜT KİTABI NO.24
Yüksek Lisans Öğrencisi, İlyada ALTINOK Doçent, Bahadır ÇOKAMAY	Çanakkale Onsekiz Mart Üniversitesi,	POST-ROMANTİK FRANSIZ BESTECİLERDE MÜZİKAL ANLAYIŞ: GELENEK İLE YENİLİK ARASINDA





6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

29.12.2024

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**HEAD OF SESSION:** Doç. Dr. Ender AKYOL

**SESSION-1 HALL-6**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doç. Dr. Abdurrahim KAPLAN, Turgay DOĞAN	Hitit Üniversitesi	PROFESYONEL VE AMATÖR FUTBOLCULARIN BESLENME TUTUMLARININ İNCELENMESİ
Tahir Buğra Yiğit, Duran Akbaş, Prof. Dr. Işık Bayraktar	Alanya Alaaddin Keykubat Üniversitesi,	1996-2024 OLİMPİYAT OYUNLARI BİSİKLET (ZAMANA KARŞI) BRANŞINDA YARIŞAN ERKEK SPORCULARININ ANTROPOMETRİK ÖZELLİKLERİNİN İNCELENMESİ
Mahmut Sami ŞENOCAK Doç. Dr. Mehmet İMAMOĞLU	Sinop Üniversitesi,	OSMANLI DÖNEMİ TÜRK OKÇULUĞUNUN KÜLTÜREL MİRAS VE MODERN SPOR BAĞLAMINDA İNCELENMESİ
Mahmut Sami ŞENOCAK Doç. Dr. Mehmet İMAMOĞLU	Sinop Üniversitesi,	TÜRKİYE'DE OKÇULUK KONUSUNDA YAPILAN LİSANSÜSTÜ TEZLERİN ANALİZİ: AKADEMİK EĞİLİMLER VE GELECEK PERSPEKTİFLERİ
Prof. Dr. Talha MURATHAN Prof. Dr. Ahmet Gökhan YAZICI Murat ATAY	İnönü Üniversitesi, Atatürk Üniversitesi,	FUTBOLDA YAPAY ZEKÂ SİMÜLASYONUNUN HAKEM PERFORMANSINA ETKİSİ
Prof. Dr. Talha MURATHAN Prof. Dr. Ahmet Gökhan YAZICI Murat ATAY	İnönü Üniversitesi, Atatürk Üniversitesi,	E- SPORUN SAĞLIK ÜZERİNE OLUMSUZ ETKİLERİNİ AZALTMAYA YÖNELİK TEKNOLOJİK ÇÖZÜMLER
Ahmet Kaşif KARAFİLİK, Gülcan YILDIZ, Taha Buğra ŞENGEZER Fikret RAMAZANOĞLU	Sakarya Uygulamalı Bilimler Üniversitesi	DÜZENLİ EGZERSİZ YAPAN BİREYLERDE SERBEST ZAMAN DOYUMUNUN İNCELENMESİ
Göksel Erman SAĞLAM, Murat ESEN, Süleyman Eren PEKDOĞAN, Taha Buğra ŞENGEZER, Gülten HERGÜNER	Sakarya Uygulamalı Bilimler Üniversitesi, Serbest Araştırmacı	BEDEN EĞİTİMİ VE SPOR ÖĞRETMENİ ADAYLARININ SPORA BAĞLILIKLARININ İNCELENMESİ
Prof. Dr. Betül AKYOL Doç. Dr. Ender AKYOL	İnönü Üniversitesi	ENGELLİ HAKLARINDA KÜRESEL EĞİLİMLER VE ENGELLİ HAKLARI ULUSAL EYLEM PLANI
Prof. Dr. Betül AKYOL Emre ATA	İnönü Üniversitesi,	ENGELLİ SPORCULARDA BESLENMENİN YÖNLENDİRİLMESİ VE ANTRENMAN





6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

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**HEAD OF SESSION:** Dr. Murat KORKMAZ,

**SESSION-1 HALL-7**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Mehmet ÇINAR	Bitlis Eren Üniversitesi	ELEKTRİK GÜÇ SİSTEMLERİNDEKİ HARMONİKLERİN ELEKTRİKLİ CİHAZLARA ETKİLERİ VE ÇÖZÜM YÖNTEMLERİ
Mehmet ÇINAR	Bitlis Eren Üniversitesi	PID KONTROLÖR TASARIM YÖNTEMLERİ
Rafet DUR	İstanbul Gedik Üniversitesi,	HASTANE ORTAMINDA ENFEKSİYON KONTROLÜ İÇİN AKILLI İZLEME VE TESPİT SİSTEMLERİ
Yasir Numan BALÇIK Prof. Dr. Ayhan MENTEŞ	Istanbul Technical University	A REVIEW OF CARBON FOOTPRINT IN TURKIYE AND THE WORLD; PROCESS AND RECOMMENDATIONS
Enes SEZER Dr. Öğr. Üyesi Yavuz ÜNAL	Amasya Üniversitesi,	BEŞ BASAMAKLI NACA RÜZGÂR TÜRBİNİ KANAT PROFİLLERİNİN AYNI ORTAM KOŞULLARINDA KARŞILAŞTIRMALI AERODİNAMİK PERFORMANS ANALİZİ
Dr. Murat KORKMAZ,	Hacettepe Üniversitesi,	KASKAD RANQUE-HİLSCH VORTEKS TÜP PERFORMANSINA BASINÇ, MALZEME VE NOZUL ETKİLERİNİN İNCELENMESİ
Lecturer Mehmet ÇEÇEN	Selçuk University,	WIND ENERGY PRODUCTION FORECASTING USING NEURAL NETWORKS: A CASE STUDY FOR KONYA
Doç. Dr. Mehmet Kadri Akyüz Prof. Dr. Önder Altuntaş	Dicle University, Eskisehir Technical University	ENERGY EFFICIENCY AND ENVIRONMENTAL SUSTAINABILITY IN AIRPORT TERMINAL BUILDINGS



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**HEAD OF SESSION:** Doç. Dr. Hakan ŞAHİN

**SESSION-1 HALL-8**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Gülsüm Yaren UÇAR Prof. Dr. Ayten Pınar BAL	Çukurova Üniversitesi,	SON 10 YILDA MATEMATİK ÖĞRETİM PROGRAMIYLA İLGİLİ YAPILAN TEZLERİN İNCELENMESİ
Gülsüm Yaren UÇAR Prof. Dr. Ayten Pınar BAL	Çukurova Üniversitesi,	GÜNEY KORE EĞİTİM SİSTEMİ
Doç. Dr. Hakan ŞAHİN Doç. Dr. Mustafa ASLANTAŞ	Bursa Technical University, Çankırı Karatekin University,	A GENERALIZATIN OF PERIODIC POINT RESULT ON B-METRIC SPACES
Doç. Dr. Hakan ŞAHİN Doç. Dr. Mustafa ASLANTAŞ	Bursa Technical University, Çankırı Karatekin University,	A BEST PERIODIC PROXIMITY POINT RESULT ON METRIC SPACES
Sabri Efe Zeybek Prof. Dr. Arzu ALTIN YAVUZ	Eskişehir Osmangazi Üniversitesi,	SU KALİTESİ KARAKTERİSTİKLERİ İÇİN ARIMA VE LSTM MODELLERİNİN KARŞILAŞTIRILMASI
Rahim Karimli	Istanbul Technical University,	SHIP REPAIR BUDGET ESTIMATION METHODS



29.12.2024

TÜRKİYE Local Time: 10:00-12:00

**HEAD OF SESSION:** Doç. Dr. Zeynep EREN

**SESSION-1 HALL-9**

AUTHORS	AFFILIATION	TOPIC TITLE
Ali AYDIN Doç. Dr. Esra DEMİR ÖZTÜRK	Muş Alparslan Üniversitesi	TÜRKİYE'DE UYGULANAN BABALARA YÖNELİK EĞİTİM PROGRAMLARI
Seher BELET Doç. Dr. Esra DEMİR ÖZTÜRK	Muş Alparslan Üniversitesi,	BABA KATILIMI: TÜRLER VE KATILIMI ETKİLEYEN FAKTÖRLER ÜZERİNE BİR İNCELEME
Zehra ÖZTÜRK Doç. Dr. Esra DEMİR ÖZTÜRK	Muş Alparslan Üniversitesi,	BABALARIN ÇOCUKLARIYLA OLAN ETKİLEŞİM SÜREÇLERİNİN İNCELENMESİ
Hasan ULUCUCAY Doç. Dr. Esra DEMİR ÖZTÜRK	Muş Alparslan Üniversitesi,	BABA-BEBEK ETKİLEŞİMİNDE KURAMSAL YAPI: BAĞLANMA TEORİSİ
Doç. Dr. Zeynep EREN	Sinop University	EVALUATION OF QUALITY EDUCATION TARGETS AS A SUSTAINABLE DEVELOPMENT GOALS
Dilek ALPER	Bursa Teknik Üniversitesi	ÇOCUKLARDA SUÇ ORANLARININ ARTMASI VE SUÇ SOSYOLOJİSİ
Doç. Dr. M. Abdulkaki KARACA Doç. Dr. Necati ÇOBANOĞLU	İnönü Üniversitesi,	AİLE İÇİ İLETİŞİMDE DEĞERLERİN ETKİSİ: ÇOCUKLARIN KARAKTER GELİŞİMİNE KATKILAR
Doç. Dr. Necati ÇOBANOĞLU Doç. Dr. M. Abdulkaki KARACA	İnönü Üniversitesi,	DEĞERLER EĞİTİMİNİN NESİLLER ARASI AKTARIMINDA AİLE İLİŞKİLERİNİN ÖNEMİ



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**HEAD OF SESSION:** Prof. Dr. Özlem KARABULUTLU

**SESSION-1 HALL-10**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Aleyna Çizel Şan Dr. Öğrt. Üyesi Necmettin Aksoy	İstanbul Arel Üniversitesi,	GENÇ YETİŞKİN BİREYLERDE EBEVEYN TUTUMU VE SOSYAL ÖĞRENMENİN BEDEN ALGISI ÜZERİNDEKİ ETKİSİNİN İNCELENMESİ
Arş. Gör. Dr., Esra Demirkan, Arş. Gör. Dr., Bükre Kahramanol Arş. Gör., İlkyaz Kaya Yıldırım Dr. Öğr. Üyesi, Neslihan Yortan	İzmir Kâtip Çelebi Üniversitesi,	KARŞIT OLMA KARŞI GELME BOZUKLUĞU OLAN ÇOCUKLARIN KİŞİLİK ÖZELLİKLERİ VE MİZAÇ AÇISINDAN İNCELENMESİ
Arş. Gör. Dr. Cansu Mine AYDIN Prof. Dr. Özlem KARABULUTLU	Kafkas Üniversitesi,	TOPLUMSAL CİNSİYET EŞİTSİZLİĞİ VE DİJİTAL ŞİDDET GENDER INEQUALITY AND DIGITAL VIOLENCE
Prof. Dr. Neriman Zengin Büşra İrem ŞENGÜL	Haliç Üniversitesi,	TELE SAĞLIK SİSTEMLERİNİN BİLEŞENLERİ
Doç. Dr. Yıldız Analay Akbaba, İrem Ece İçöz, Rezzan Atay, Mehmet Fatih Doğmuş	İstanbul Üniversitesi- Cerrahpaşa	EKRAN BAĞIMLILIĞININ BOYUN FONKSİYONLARI, UYKU KALİTESİ VE POSTÜR ÜZERİNE ETKİSİ VAR MIDIR?
Nilufar ABDURAKHİMOVA Doç. Dr. Ayşe ÇİÇEK KORKMAZ	Bandırma Onyeddi Eylül Üniversitesi	AFET HEMŞİRELİĞİNDE LİDERLİK: KARŞILAŞILAN ZORLUKLAR VE ÖNERİLER



29.12.2024

TÜRKİYE Local Time: 14:00-16:00

**HEAD OF SESSION: Prof. Dr., Ümit M. Koçyiğit**

**SESSION-1 HALL-1**

AUTHORS	AFFILIATION	TOPIC TITLE
Esra AKDENİZ Doç. Dr. Arzu YİĞİT	Süleyman Demirel Üniversitesi,	SAĞLIK HARCAMALARININ SAĞLIK SONUÇLARINA ETKİSİNİN GRİ İLİŞKİSEL ANALİZ YÖNTEMİ İLE TESPİT EDİLMESİ
Arş. Gör. Dr. Şule ŞENOL	Akdeniz Üniversitesi,	ÖZEL GEREKSİNİMLİ ÇOCUKLARIN FİZİKSEL OYUN ALANLARINA ERİŞİMİ: KARŞILAŞILAN ENGELLER VE ÇÖZÜM ÖNERİLERİ ÜZERİNE KAPSAMLI BİR LİTERATÜR TARAMASI
Arş. Gör. Dr. Şule ŞENOL	Akdeniz Üniversitesi,	PEDİATRİK ONKOLOJİ HASTALARINDA KEMOTERAPİYE BAĞLI SEMPTOM YÖNETİMİNDE NONFARMAKOLOJİK YÖNTEMLERİN ROLÜ VE HEMŞİRELİK YAKLAŞIMLARI
Prof. Dr., Ümit M. Koçyiğit	Sivas Cumhuriyet University	EFFECT OF OCİMUM BASİLİCUM L. PLANT EXTRACT ON ACETYLCHOLINESTERASE ENZYME
Prof. Dr., Ümit M. Koçyiğit	Sivas Cumhuriyet University	PAEONIA TURCICA PLANT EXTRACT'S EFFECT ON THE ACETYLCHOLINESTERASE ENZYME
Dr. Öğr. Üyesi Hatice ACAR BEKTAŞ	Tokat Gaziosmanpaşa Üniversitesi,	GEBELİKTE BULANTI VE KUSMA İLE HİPEREMEZİS GRAVİDARUMUN YÖNETİMİ: KANITA DAYALI YAKLAŞIMLAR VE ÖNERİLER
Dr. Öğr. Üyesi Hatice ACAR BEKTAŞ	Tokat Gaziosmanpaşa Üniversitesi,	GEBELİKTE BEL AĞRISININ YÖNETİMİ: EBELİK YAKLAŞIMLARI



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**HEAD OF SESSION:** Doç. Dr. Fuat LEBE

**SESSION-1 HALL-2**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doç. Dr. Fuat LEBE Fatma KORKMAZ	Osmaniye Korkut Ata Üniversitesi, Nurettin Topçu İmam Hatip Ortaokulu,	EKONOMİK KRİZLERİN TEMEL ÖZELLİKLERİ VE NEDENLERİ: MODELLER ÇERÇEVESİNDE BİR DEĞERLENDİRME
Doç. Dr. Fuat LEBE Ercüment ÜÇKARDEŞ	Osmaniye Korkut Ata Üniversitesi	KEYNESYEN YAKLAŞIM VE WAGNER YASASI: TEORİK BİR PERSPEKTİF
Dr. Öğr. Üyesi, A. Muhammet BANAZILI	Tarsus Üniversitesi,	DÜNYADA KAMU YÖNETİMİNDE YAPISAL VE İŞLEVSEL SORUNLAR: ÇÖZÜM YOLLARI
Dr. Öğr. Üyesi, A. Muhammet BANAZILI	Tarsus Üniversitesi,	KAMU YÖNETİMİNİ GÜÇLÜ YAPABİLECEK İLKELER NELERDİR?
Doç. Dr. Ahmet GÖKDEMİR	İstanbul Üniversitesi,	TÜRKİYE'DE OSMANLI'DA KIRÂAT İLMİNE DAİR YAPILMIŞ ÇALIŞMALAR
Assoc. Prof. Dr. Serap SARIBAŞ	Karamanoğlu Mehmetbey University	İNSANLIĞIN DRAMINA DAİR ESKİMEYEN BİR HİKAYENİN TABLOLARI KÖYLÜLER
Assoc. Prof. Dr. Serap SARIBAŞ	Karamanoğlu Mehmetbey University	POSTMODERN ALEGORİ: ZAMAN-MEKANIN ÖTESİNDE ÖZGÜRLÜĞÜN METAFORU ZAVALLILAR
Doç. Dr. Engin Derman	Akdeniz Üniversitesi,	MARATON TURİZMİ
Doç. Dr. Engin Derman	Akdeniz Üniversitesi,	OTEL İŞLETMELERİNDE YAPAY ZEKA KULLANIMI



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

29.12.2024

TÜRKİYE Local Time: 14:00-16:00

**HEAD OF SESSION: Doç. Dr. Sıtkı ERMİŞ**

**SESSION-1 HALL-3**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Doç. Dr. Sıtkı ERMİŞ	Eskişehir Osmangazi Üniversitesi,	ÇOKLU TOHUM KAPLAMA TEKNOLOJİLERİNDE SON GELİŞMELER
Doç. Dr. Sıtkı ERMİŞ	Eskişehir Osmangazi Üniversitesi,	ŞEKER MISIR (ZEA MAYS L. VAR. SACCHARATA) ÜRETİMİNDE GELİŞMİŞ TOHUM KAPLAMA TEKNİKLERİNİN ETKİSİ
Öğr. Gör. Dr. Ayşe Nur PEKTAŞ	Sivas Cumhuriyet Üniversitesi	ANTİMİKROBİYAL PEPTİD ARAŞTIRMALARINDA İN SİLİKO ANALİZLER
Öğr. Gör. Dr. Ayşe Nur PEKTAŞ	Sivas Cumhuriyet Üniversitesi	DERİN MUTASYON TARAMASI VE MAKİNE ÖĞRENİMİ
Dr. Doğançan KAHYA Doç. Dr. Refik BOZBUĞA	Eskişehir Osmangazi University	INSECT PESTS AND PLANT PARASITIC NEMATODE SPECIES CAUSING DAMAGE IN KIWIFRUIT ORCHARDS
Dr. Doğançan KAHYA, Doç. Dr. Refik BOZBUĞA	Eskişehir Osmangazi University	INSECT PESTS AND PLANT PARASITIC NEMATODE SPECIES CAUSING DAMAGE IN AVOCADO ORCHARDS
Doç. Dr. Burcu GEZER ŞEN	Fırat Üniversitesi,	OYUN DOSTU EBEVEYNLİK
Doç. Dr. Burcu GEZER ŞEN	Fırat Üniversitesi,	ÇOCUKLARIN ZAMAN KULLANIMI





29.12.2024

TÜRKİYE Local Time: 14:30-16:30

**HEAD OF SESSION: Doç.Dr.EBÜLFƏZ EZİMLİ**

**SESSION-1 HALL-4**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
NAZİM ƏHMƏDOV	Naxçıvan Dövlət Universiteti	İKİ QARDAŞ ÖLKƏ: AZƏRBAYCAN-TÜRKİYƏ İQTİSADİ ƏLAQƏLƏRİ VƏ SÜRƏTLİ İNKİŞAF TENDENSİYASI
Aynur Murad gizi Namazova	ASPU,	ABOUT VOWELS AND CONSANANTS IN TURKIC LANGUAGES
GÜLTAC MURADOVA	Naxçıvan Dövlət Universiteti	RƏŞİDBƏY ƏFƏNDİYEV YARADICILIĞINDA TƏLİM VƏ TƏHSİLİN İNKİŞAFI PROBLEMİ
KAMAL CAMALOV GÜLMİRA HACIYEVA	Naxçıvan Müəllimlər İnstitutu	FOLKLOR NÜMUNƏLƏRİNDƏ TƏRBİYƏNİN ROLU VƏ ƏHƏMİYYƏTİ (NAXÇIVAN XALQ PEDAQOGİKASI NÜMUNƏLƏRİ ƏSASINDA)
KAMAL HƏSƏN OĞLU CAMALOV ŞƏRAFƏT ARAM QIZI BAXIŞOVA	Naxçıvan Müəllimlər İnstitutu	TƏLİMİN TƏRBİYƏDƏDİCİ ROLUNU YÜKSƏLTMƏK DÖVRÜN TƏLƏBİDİR
KONÜL KAMAL gırl JAMALBAYLI	Nakhchivan State University	POSSIBILITIES AND WAYS OF USING DEVELOPMENTAL TASKS IN THE TEACHING OF INFORMATICS
KİFAYƏT ƏHMƏDOVA	Azərbaycan Dövlət Pedaqoji Universiteti	GƏNC AİLƏLƏRDƏ QARŞILIQLI MÜNASİBƏTLƏR VƏ PSIXOLOJİ MÜHİTİN FORMALAŞMASINA TƏSİR EDƏN AMİLLƏR
Elnarə Seyidova	Naxçıvan Dövlət Universiteti,	SİNİFDƏNKƏNAR DİYARŞÜNASLIĞIN ƏTRAF MÜHİTİN ÖYRƏNİLMƏSİNDƏ ƏHƏMİYYƏTİ
Doç.Dr.EBÜLFƏZ EZİMLİ	Naxçıvan Dövlət Universiteti,	XX ƏSR AZƏRBAYCAN ƏDƏBİYYATŞÜNASLIĞI: TƏNQİDİ REALİZMİN TƏDQIQI PROBLEMLƏRİ: MİR CƏLAL PAŞAYEVİN “NƏSRİMİZİN BANİLƏRİ” MƏQALƏSİNDƏ YENİ NƏSR ÖZƏLLİKLƏRİ ÜZRƏ TƏHLİL
Emil Raul oğlu Ağayev	Azerbaijan State Pedagogical College under the Azerbaijan State Pedagogical University	OUR HISTORY OF VICTORY IN THE CREATIVITY OF AZERBAIJAN PAINTERS
Doç.Dr.EBÜLFƏZ EZİMLİ	Naxçıvan Dövlət Universiteti,	CƏLİL MƏMMƏDQULUZADƏ YARADICILIĞININ POETİKASI: “MOLLA NƏSRƏDDİN” DƏRGİSİNDƏ HƏYAT HƏQİQƏTLƏRİNİN YENİ İFADƏ ÜSULLARI
Doç.Dr.EBÜLFƏZ EZİMLİ	Naxçıvan Dövlət Universiteti,	XX ƏSR AZRBAYCAN ƏDƏBİYYATI: HÜSEYN CAVİDİN ”ŞEYX SƏNAN” FACİƏSİNDƏ BƏŞƏRİN KORLUĞU VƏ EŞQİN QƏLƏBƏSİ
KAMAL HASAN oğlu JAMALOV AYSEN CEYHUN gizi MAMMADOVA	Naxçıvan Müəllimlər İnstitutu	LOVE FOR A BABY IS THE WIND UNDER MY WINGS
Turopova Gulnozaxon Nazarkulovna	Gülistan Devlet Üniversitesi	LİSEDE FİZİK EĞİTİMİNDE MODÜLER EĞİTİM TEKNOLOJİLERİNİN TEORİK TEMELLERİ
Shayzakov Gulom Mukhtarovich	Gulistan State University	THE TRANSLATION OF THE TEMPORAL FUNCTIONAL- SEMANTIC FIELD FROM ENGLISH TO UZBEK



29.12.2024

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**HEAD OF SESSION: Nana Jincharadze Professor****SESSION-1 HALL-5**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Kenza Hazine, Chaima Mouffouk, Soumia Mouffouk , Hamada Haba .	Batna-1 University, University of Batna 2 Mustapha Benboulaid,	ANALYSIS OF ANTIOXIDANT AND REDUCING POWER ACTIVITIES IN BUTANOL EXTRACT FROM HEDYSARUM
Kenza Hazine, Chaima Mouffouk, Soumia Mouffouk 1 , Hamada Haba	Batna-1 University, University of Batna 2 Mustapha Benboulaid,	DPPH FREE RADICAL SCAVENGING ACTIVITY OF PETROLEUM ETHER, ETHYL ACETATE, AND N-BUTANOL EXTRACTS FROM HEDYSARUM PLANT
Gjylai ALIJA 1 *, Merita DAUTI 1 , Drita YZEIRI-HAVZIU 1 ,Arlinda HAXHIU-ZAJMI 1 , Sihana AHEMTI-LIKA 1 , Lulzime BALLAZHI 1 , Edita ALILI-IDRIZI	State University of Tetova, Tetova R. N. M.	FOOD AND NUTRITION: ESSENTIAL FACTORS IN PUBLIC HEALTH AND THE CHALLENGE OF MALNUTRITION
GANAOUI MAROUA GANAOUINAWEL BOUZID R KHELEF D	Chadli Ben Djedid El-tarf University. Ibn Khaldoun Tiaret University	ANTIBIOTIC USE IN DAIRY CATTLE FARMING: RISKS AND PRACTICES IN SOUK AHRAS REGION
Neada Hysenaj , Edit Xhajanka , Marsela Fagu , Sara Vasku , Inva Idrizi, Dea Bejko , Aurora Mema , Sindi Asqeri	University of Medicine, Tirana, Albania	BIOSINT PROJECT: THE INTERNATIONALIZATION OF EXISTING COURSES.
Khaoula Elcadi , Pr.Najib kissani	Cadi Ayaad University Mohammed VI University	THE MIND-BODY CONNECTION IN PARKINSON'S DISEASE
Khaoula Elcadi , Pr.Najib kissani	Cadi Ayaad University Mohammed VI University	THE IMPACT OF PARKINSON'S DISEASE ON THE BRAIN AND BODY
Major Gheorghe GIURGIU 1 , Prof dr med Manole COJOCARU	Deniplant-Aide Sante Medical Center, Titu Maiorescu University,	NATURAL MODULATION OF THE GUT MICROBIOTA IN PATIENTS WITH FOOD ALLERGIES. IMPACT OF ALERGIPLANT
Major Gheorghe GIURGIU 1 , Prof dr med Manole COJOCARU	Deniplant-Aide Sante Medical Center, Titu Maiorescu University,	THE THERAPEUTIC EFFECTS OF DENIPLANT NUTRACEUTICALS ON THE GUT MICROBIOME IN PATIENTS WITH PSORIASIS
Kenza Hazine , Chaima Mouffouk Soumia Mouffouk 1 , Hamada Haba	Batna-1 University, University of Batna 2 Mustapha Benboulaid,	ISOLATION AND BIOLOGICAL CHARACTERIZATION OF A COMPOUND FROM HEDYSARUM PLANT WITH CHOLESTEROL- LOWERING ACTIVITY
Kenza Hazine , Chaima Mouffouk Soumia Mouffouk 1 , Hamada Haba .	Batna-1 University, University of Batna 2 Mustapha Benboulaid,	ISOLATION AND BIOLOGICAL CHARACTERIZATION OF A COMPOUND FROM LEGUMINOUS PLANT WITH ANTIOXIDANT ENHANCING PROPERTIES
Nana Jincharadze Professor	European University, Tbilisi, Georgia	ULTRASOUND EXAMINATION IN THE ROUTINE CARE OF NEWBORNS



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**HEAD OF SESSION: Dr. Silva İBRAHİMİ PhD**

**SESSION-1 HALL-6**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Silva İBRAHİMİ PhD Dott.Ervin İBRAHİMİ MD	EYRA Psychosocial Assistance, Boston USA, Lecturer “University of Tirana” Medical Responsabile Azzeruolo, Cooss- Marche, Italy	JUVENİLE DELİNQUENCY İN THE WESTERN BALKANS: A RİSİNG TREND OF A WORRYİNG FUTURE
Dott.Ervin İBRAHİMİ MD Dr. Silva İBRAHİMİ PhD	Medical Responsabile Azzeruolo, Cooss- Marche, Italy EYRA Psychosocial Assistance, Boston USA, Lecturer “University of Tirana”	TRANSCULTURAL HEALTH CARE: NURSİNG CARE FOR OF FOREIGN ETHNICITY PEOPLE
Dott.Ervin İBRAHİMİ MD Dr. Silva İBRAHİMİ PhD	Medical Responsabile Azzeruolo, Cooss- Marche, Italy EYRA Psychosocial Assistance, Boston USA, Lecturer “University of Tirana”	FAMILY AND COMMUNITY NURSİNG NEW SCENARIOS FOR THE HEALTH WELFARE
Anam Fatima Asma Awan Manoj Sharma	University of Nevada Las Vegas,	MENTORİNG AND TRAINİNG THE ENTRY-LEVEL PUBLIC HEALTH WORKFORCE ON EXPERİENTİAL LEARNİNG İN AN ACADEMIC SETTING
Sharmistha Roy, Asma T Awan, Dr. Manoj Sharma,	University of Nevada, Las VegasUSA	EVALUATING THE ROLE OF EXPERİENTİAL LEARNİNG İN SHAPİNG OUTCOMES İN A MASTER OF PUBLIC HEALTH PROGRAM AT A SOUTHWESTERN UNIVERSITY
Toufik Bousnane	Ghardaia University,	STRESSES AT THE İNTERFACE
GHİZLANE BOUAZZA, TAODA HASNAE , SOUFİANI ABDELAATI 1 BOUALAM ABDERAHMAN , BELOMARİA MOHAMED 1.2 HAJAR LEGHLİBİ	Ibn Tofail University, Kenitra	THE KNOWLEDGE AND PRACTICES OF HEALTHCARE PROFESSIONALS REGARDİNG TEAMWORK İN THE EMERGENCY DEPARTMENT OF KENİTRA
Major Gheorghe GIURGIU 1 , Prof. dr. Manole COJOCARU	Deniplant-Aide Sante Medical Center, Titu Maiorescu University,	WHAT’S NEW İN STROKE: İNŚİGHTS FOR CLİNICAL PRACTİCE WİTH NEUROPOLEN
Abderrahmane Boualam, Abdelaati Soufiani , Driss Touil , Yassine Mounian , Ghizlane Bouazza ,Otmane El Brini, Mohammed Belomaria , El Mahjoub Aouane	Ibn Tofail University,	DETERMİNANTS OF TUBERCULOSİS DİSTRİBÜTİON İN SİDİ KACEM PROVİNCE, MOROCCO: A THREE-YEAR RETROSPECTİVE STUDY
Abdelaati.Soufiani, Abderrahmane.Boualam,Yassine.Mounane, Hassna.Touda, Ghizlane.Bouazza, Driss.Touil, Driss.Hmouni	Ibn Tofail University, Kenitra, Morocco, Higher Institute of Nursing and Health Technology Professions – Kenitra, Morocco	Understanding Medication Compliance in Diabetic Patients: Associations with Stress Levels and Self-Esteem - A Study from Kenitra, Morocco
Zineb Ait Fares, Miloudi Hlaibi, Nouredine Kami, Rachid Ouchn	Hassan II University of Casablanca, Higher School of Technology Casablanca ESTC,	Polymeric membranes for desalination using membrane distillation: A review



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HEAD OF SESSION: PhD, Hanna V.

SESSION-1 HALL-7

AUTHORS	AFFILIATION	TOPIC TITLE
Usha Thakur	MCM DAV College Kangra- (Himachal Pradesh)	PHYSICO-CHEMICAL PROPERTIES OF SOIL IN A PROTECTED AREA NETWORK (CHUR PEAK): CHURDHAR WILDLIFE SANCTUARY IN WESTERN HIMALAYA, INDIA
Ansar Bilyaminu adam, Musa Yahaya Abubakar and Salim Abdullahi Baso	Sciences Federal University Wuakari, Sa adatu Rimi Colleege of Education, Kumbotso Kano.	The Potential of Supramolecular Organic Frameworks: Shaping the Future of Molecular Design
Musa Yahaya Abubakar, Ansar Bilyaminu adam and D. Abubakar	Federal University Wuakari ,Development Centre Billiri (Biodec) National Biotechnology Development Agency (Nabda)	Biosynthesis and Pharmacological Evaluation of Microbial Natural Products
Abderrahmane Boualam, Abdelaati Soufiani, Driss Touil, Yassine Mounian, Ghizlane Bouazza, Otmame El Brini, Mohammed Belomaria, El Mahjoub Aouane	Laboratory of Natural Resources and Sustainable Development, Higher Institute of Nursing and Health Technology Professions, Ibn Tofail University, Kenitra, Morocco	Determinants of Tuberculosis Distribution in Sidi Kacem Province, Morocco: A Three-Year Retrospective Study
Sidra Haroon	University of Management and Technology, School of Liberal Arts, Lahore, Pakistan	IMPACT OF CATEGORİZATIÖN ON LEARNİNG OF ENGLİSH VOCABULARY BY UNDERGRADUATE PAKİSTANİ ESL LEARNERS: A STUDY OF SEMANTİC AND THEMATIC AND UNRELATED CLUSTERİNG
Manal NAFAl, Assia BOUHOUDAN, Amina LYAGOUBI, Lahmoudi ADIL, Jamal TOUTOUH, Mohammed BAKKALI, Nadira MOURABIT	Abdelmalek Essaâdi University Tangier, Morocco. Mohammed V Regional Hospital, Al Hoceima, Morocco.	ANTIBIOTICS AND THEIR RESIDUES IN WASTEWATER: A COMPREHENSIVE REVIEW ON ENVIRONMENTAL IMPACT AND ANTIBIOTIC RESISTANCE
Chaimaa Elkahlaoui and Chaimaa	University Ain CHOK, Casablanca, Morocco	Study of complexes of malonic acid and methylmalonic with Gadolinium
Mahmoud Oudghiri, Boutaina Yamani, Noura Benlemlih, Safae EL Aammouri, Nagla Abid, Najiba Brhadda, Yassine Mouniane, Mohammed Ibriz	Plant, Animal, and Agro-Industry Production Laboratory, Ibn Tofail University, Kenitra, Morocco	Impact of heavy metals (Ni and Co) on growth and biochemical responses in maize (Zea mays)
TALEB Mohamed Karim	USTO.MB University – Algeria, University of Oran, Algeria	IMPACT OF WASTEWATER TREATMENT PLANTS ON THE ENVIRONMENT CASE: MOSTAGANEM WASTEWATER TREATMENT PLANT (WESTERN ALGERIA)
Asad Ullah	University of Veterinary and Animal Sciences, Lahore, Pakistan.	Potential oncogenic mechanisms regarding high risk Human Papilloma Virus 16 & 18 in causing Oral Squamous Cell Carcinoma: An Overview
PhD, Hanna V. Rashevskva, Lecturer, Maksim O. Kvitko, PhD, Eduard O. Yevtushenko	Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine	ZOOLOGICAL PROBLEMS OF ECOSAFETY AND RESEARCH WORK IN UKRAINIAN EDUCATION
Lecturer, Maksim O. Kvitko, Senior Lecturer, Hanna O. Kvitko, Prof. Dr. Olena A. Lykholat	Kryvyi Rih State Pedagogical University, Kryvyi Rih, “State University “Kyiv Aviation Institute”, Kryvyi Rih, University of Customs and Finance, Dnipro, Ukraine	SAFETY DIRECTION OF HUMAN LIFE AND YOUTH HEALTH PROTECTION IN THE EDUCATION SECTOR OF THE INDUSTRIAL CITY OF KRYVY RIGH IN UKRAINE
Leila Bijos		DUE PROCESS OF LAW IN RESPONSE TO UKRAINIAN CRISIS
Dr. BLERINA XHELAJ	University “Ismail Qemali” Vlora, Albania	ADVANTAGES AND DISADVANTAGES OF ONLINE LEARNING IN ALBANIAN EDUCATION



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**HEAD OF SESSION: Dr. Vijay Singh**

**SESSION-1 HALL-8**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Aastha Agnihotri	University Institute of Legal Studies, Himachal Pradesh University	THE ROLE OF DIGITALIZATION IN TRANSFORMING THE INDIAN LEGAL SYSTEM: A CITIZEN-CENTRIC APPROACH
Dr. Vijay Singh	Himachal Pradesh University	HANDICRAFTS AS A LIVELIHOOD OPTION: EMPOWERING TRIBAL WOMEN THROUGH SKILL DEVELOPMENT
Dr. Sapna Devi	Himachal Pradesh University	IMPACT OF PUBLIC HEALTH PROGRAMS ON TRIBAL COMMUNITIES: A STUDY OF ACCESSIBILITY AND EFFECTIVENESS
Fika DEALOVA Octavia Janate AULIANA Radit Alfa RIQZA Novi MARISKA	UIN K.H. Abdurrahman Wahid Pekalongan	IMPROVING UNDERSTANDING OF DIALECTICAL MODELS OF SCIENCE AND RELIGION FOR ISLAMIC ECONOMICS STUDENTS AT UIN KH ABDURRAHMAN WAHID PEKALONGAN
Meidiana CİTRA Bahtiar EFFENDİ	UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia	BUSINESS MODELS IN THE CREATIVE ECONOMY
M. Fikri Ardianto	UIN K.H. Abdurrahman Wahid Pekalongan,  Indonesia	HARMONIZATION OF SCIENCE AND RELIGION, CREATING HARMONY IN THE WORLD OF EDUCATION
Muhammad Reza KURNIAWAN	UIN K.H. Abdurrahman Wahid Pekalongan,  Indonesia	SHARIA ECONOMY DRIVES TRANSFORMATION OF INDONESIAN AND GLOBAL ECONOMY
Fika DEALOVA	UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia	OPTIMIZATION OF E-COMMERCE FOR SHARIAH ECONOMIC GROWTH IN THE ERA OF TECHNOLOGY 5.0
Maia Salsa NURFARADISA	K.H. Abdurrahman Wahid State Islamic University Pekalongan, Indonesia	INSPIRING THE YOUNG GENERATION: SHARIA FINANCIAL LITERACY WITH UIN SYARIF HIDAYATULLAH JAKARTA AND PRUDENTIAL
Kamilah FIDINI	UIN K.H. Abdurrahman Wahid Pekalongan	IILM'S ROLE IN STRENGTHENING SHARIA FINANCIAL LIQUIDITY THROUGH SUKUK





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**HEAD OF SESSION: Dr. Chems Eddine BOUKHEDIMI**

**SESSION-1 HALL-9**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Chems Eddine BOUKHEDIMI	University of Tizi Ouzou,	IMPACT OF THE GENDER OF TOURISTS ON THE WILLINGNESS WITH THE INBOUND TOURISM IN INDIA
Dr. Chems Eddine BOUKHEDIMI	University of Tizi Ouzou,	SATISFACTION WITH THE DELIVERY TIME: GENDER BASED-STUDY AMONG ALGERIAN E-SHOPPERS
DR CHUKWUEMEKA GODSON EME (PhD), 1; MOHAMMED BAPPAH,	National Open University of Nigeria	THE IMPACT OF PETROL PUMP PRICE DEREGULATION IN SHAPING REMOTE WORK AND VIRTUAL TEAMS: IMPLICATIONS FOR HUMAN RESOURCE MANAGEMENT (HRM)
CHUKWUEMEKA GODSON EME (PhD)	National Open University of Nigeria	THE IMPACTS OF MULTINATIONAL CORPORATIONS ON THE SOCIO-ECONOMIC DEVELOPMENT OF NIGERIA (A CASE STUDY OF NIGERIA BREWERIES PLC)
Sabrina Zahroh M. Farel Tsaqif Sulistiya Puji Astuti M. Rafi Fayyadh Lia Fatra Nur Laili Kamalin	State Islamic University of Pekalongan, Indonesia	THE IMPORTANCE OF PRAYER IN THE VIEW OF SCIENCE
Sabrina ZAHROH	State Islamic University of Pekalongan, Indonesia	STRENGTHENING INDONESIA'S ECONOMY THROUGH HALAL INDUSTRY DOMINANCE
Nanda Kartika Putri	UIN K.H. Abdurrahman Wahid Pekalongan	EFFECTIVENESS OF THE KARANG TARUNA PROGRAMME IN BUILDING SOCIAL AWARENESS IN BANGKLE VILLAGE, BLORA REGENCY
Muhammad Zaky MARDIKA	UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia	ANALYSIS OF SHARIA ECONOMIC LAW DISPUTE CASES
Hendri Hermawan ADINUGRAHA Sulistiya Puji ASTUTI	State Islamic University of Pekalongan, Indonesia	INTEGRATION OF SCIENCE AND TECHNOLOGY AND RELIGIOUS VALUES: PILLARS OF FUTURE SUSTAINABILITY
nafal fikri	State Islamic University of Pekalongan, Indonesia	CREATIVE ECONOMY AS A CATALYST FOR SUSTAINABLE TOURISM DESTINATION DEVELOPMENT
DR CHUKWUEMEKA GODSON EME (PhD)	National Open University of Nigeria	DESIGN AND IMPLEMENTATION OF A COMPUTERIZED RESTAURANT MANAGEMENT INFORMATION SYSTEM: A STUDY OF JEVENIKS RESTAURANT LTD., ABUJA FCT
DR CHUKWUEMEKA GODSON EME (PhD)	National Open University of Nigeria	AN ANALYSIS OF THE IMPACT OF DIGITAL MARKETING ON PRODUCTIVITY OF SELECTED SMES IN ABUJA, NIGERIA
DR CHUKWUEMEKA GODSON EME	National Open University of Nigeria	THE EFFECTS OF EFFECTIVE COMMUNICATION ON ORGANIZATIONAL PERFORMANCE (A STUDY OF NIGERIAN GEOLOGICAL AND SURVEY AGENCY, ABUJA, NIGERIA)



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**HEAD OF SESSION: Dr. Blerina Xhelaj**

**SESSION-1 HALL-10**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Namira Clara ALICIA	State Islamic University of KH Abdurrahman  Wahid Pekalongan , Indonesia	TARGET MİLLENNİALS AND GEN Z, HALAL KULTURE MARKET HELD EARLY NOVEMBER
Akshay Kumar <sup>1</sup> , Dr Manohar Lal <sup>2</sup> , Dr Neelam Kumari <sup>3</sup> , Sumit Kumar <sup>1</sup> and Diksha Sharma	Himachal Pradesh University, Shimla, India	EXPLORING THE ROLE OF RAFTING AND WHITEWATER KAYAKING IN DEVELOPING EMPATHY AND EMOTIONAL SELF-REGULATION AMONG ADULTS
Salsabila Natasya Wibowo Hendri Hermawan Adnugraha	Uin K.H. Abdurrahman Wahid Pekalongan, Indonesia	PAYLATER SYSTEM ANALYSIS ON IMPULSE BUYING BEHAVIOR OF STUDENTS IN THE DIGITAL ERA FROM AN ISLAMIC PERSPECTIVE : CASE STUDY OF STUDENTS UIN K.H. ABDURRAHMAN WAHID PEKALONGAN
Assoc.Prof.Dr. K.Vrenjo * Msc. Migen Memelli	Sports University of Tirana	PLANNİNG FOR THE DEVELOPMENT OF ENDURANCE QUALİTY, A FUNDAMENTAL CONDİTION FOR İMPROVİNG THE CARDİO-RESPIRATORY SYSTEM İN FOOTBALL PLAYERS
Ajayi, Olayemi T. Ajayi, Noah O.	Lagos State University of Education, Nigeria	EXPLORİNG THE İNTERSECTİON OF ART EDUCATİON AND GRAPHİC DESİGN İN DEVELOPİNG İNCLUSİVE LEARNİNG MATERİALS FOR SPECIAL NEEDS STUDENTS
Ajayi, Olayemi T. and Sola Alimi PhD	Lagos State University of Education, Nigeria	GRAPHİC DESİGN FOR CLİMATE ACTİON: VİSUAL STRATEGİES FOR PROMOTİNG BİODİVERSİTY CONSERVATİON AND RENEWABLE ENERGY ADOPTİON
Dr. Blerina Xhelaj	University “ Ismail Qemali” Vlora, Albania	ALBANIA IN THE YEARS (1912- 1914)
Dr. Blerina Xhelaj	University “ Ismail Qemali” Vlora, Albania	ALBANIAN NATIONAL RENAISSANCE
Sara Kayello	Lebanese International University Lebanon	THE EFFECT OF 4/3/2 TECHNIQUE ON IMPROVİNG STUDENTS’ FLUENCY İN ESL CLASSROOM İN CYCLE TWO İN ONE OF THE SCHOOLS İN SAİDA DİSTRİCT
Dr. Blerina Xhelaj	University “Ismail Qemali” Vlora, Albania	ALBANIA AND THE BALKANS FACED BY MILITARY ALLIANCES DURING THE FIRST WORLD WAR





6. BILSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

29.12.2024

TÜRKİYE Local Time: 14:30-16:30

**HEAD OF SESSION: HASSAN ZARIOUH**

**SESSION-1 HALL-11**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Fettouch Houari	,University of Mostaganem,	ORDER OF GROWTH OF SOLUTIONS OF DIFFERENTIAL EQUATIONS IN UNIT DISC
Fettouch Houari	,University of Mostaganem,	STABILITY OF LOGARITHMIC TYPE FOR A HADAMARD FRACTIONAL
Amjid Khan Dr. Jawad Ali	Kohat University of Science and Technology KPK, Pakistan	DECISION-MAKING FRAMEWORK WITH HAMY MEAN OPERATORS AND LINGUISTIC Q-RUNG ORTHOPAIR FUZZY SETS
Carla Santos Ana Dias	New University of Lisbon, Portugal	STATISTICAL GRAPHS QUALITY AND ETHICS IN OCCUPATIONAL HEALTH AND SAFETY COMMUNICATION
Azhar Nawaz	Kohat University of Science and Technology	FINITE ELEMENT METHOD FOR FRACTIONAL ORDER 2D DIFFUSION EQUATIONS
INZIMAM ULHAQ	KUST University of Science and technology, Kohat,	LINEARIZATION OF SOME CLASSES OF NON-LINEAR SECOND ORDER ODES
ZIA UR REHMAN	Kohat University of Science and Technology, Kohat, Pakistan	POLYNOMIAL FINITE ELEMENT METHOD FOR PROBLEMS WITH NON-HOMOGENEOUS BOUNDARY CONDITIONS OVER CURVED DOMAINS
Inam Ullah and Abdullah Yar Dr.Abdullah Yar,	Kohat University of Science & Technology(KUST),kohat,Pakistan	EFFECTS OF ELECTRIC AND MAGNETIC FIELDS ON BLOCH OSCILLATIONS IN MONOLAYER BOROPHENE
HASSAN ZARIOUH	(CRMEF-Oujda), Morocco.	HOLOMORPHIC CURVES INTO ALGEBRAIC VARIETIES INTERSECTING DIVISORS IN SUBGENERAL POSITION
TARIK RHARMAOUI HASSAN ZARIOUH	CRMEF-Oujda), Morocco.	PERSUASIVE ATTRACTIONS IN THE ADVERTISING DISCOURSE: TELEVISION ADVERTISING THAT TARGETS ADOLESCENT AS AN EXAMPLE
Abderrahmane RAJI	Sultan Moulay Slimane University, Beni Mellal, Morocco	SOME IDENTITIES POLYNOMIAL IN 3-PRIME NEAR-RINGS
Abdelkarim BOUA	Sidi Mohammed Ben Abdellah University, Morocco	IDENTITIES IN 3-PRIME NEAR-RINGS INVOLVING LEFT GENERALIZED HOMODERIVATIONS



29.12.2024

TÜRKİYE Local Time: 14:30-16:30

**HEAD OF SESSION: DR CHUKWUEMEKA GODSON EME**

**SESSION-1 HALL-12**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Abdu Mustapha Badaki Olusegun, Yakubu Inuwa Balewa Aminu Adamu Ahmed*	Federal University Nigeria	THE IMPACT OF CLIMATE CHANGE ON PUBLIC HEALTH AND STRATEGIES FOR ADAPTATION
Sanusi Gambo Farida Balarabe Usman Yahya Ibrahim Aminu Adamu Ahmed* Nuru Yakubu Umar Ahmad Adamu Ahmad	Sa'adu Zungur  University,	HARNESSING INNOVATIVE FINANCIAL INSTRUMENTS: THE ROLE OF GREEN BONDS AND CLIMATE INSURANCE IN FUNDING CLIMATE-RESILIENT INFRASTRUCTURE PROJECTS
Sanusi Gambo Usman Yahya Ibrahim Farida Balarabe Aminu Adamu Ahmed Nuru Yakubu Umar Ahmad Adamu Ahmad		TRANSFORMING INVESTMENT STRATEGIES: THE ROLE OF SUSTAINABLE FINANCE IN FOSTERING CLIMATE-RESILIENT INFRASTRUCTURE
M-r Sašo Lazaroski	Power Plants of the Republic of North Macedonia	THE GLOBAL POWER PLANT SYSTEM IN THE WORLD WITH A REVIEW OF THE REPUBLIC OF NORTH MACEDONIA
Messaouda Kermani Nour El Houda		ETHICAL AND LEGAL CHALLENGES
AISSI Jean-Roitinos , , SODJI Jean ,, AKOGBETO Nadine, AZIAN Donatien , ASSOGBA Sylvestre 4 , GOUTHON Gilchrist 1 , DOHAMI Amaleck, HOUNDONUGBO Pierrette , ADONON Brice, GBESSO Florence, TECHOU Roland, MONTCHO Bruno , , ABDOULAYE Djafarou	University of Abomey-Calavi (UAC), Benin	CADJEHOUN CARDINAL BERNADIN GANTIN INTERNATIONAL AIRPORT'S CONTRIBUTION TO TOURISM PROMOTION
Sara ZELLELEG	A-Mira University of Bejaia,	THE ROLE OF MARKETING AUTOMATION IN THE ACCELERATION OF THE GROWTH OF E-COMMERCE STARTUPS: THE CASE OF M CAKE SHOP
DR CHUKWUEMEKA GODSON EME	National Open University of Nigeria	INVESTIGATING THE EFFECTS OF EMPLOYEE TRAINING & MANAGEMENT DEVELOPMENT ON ORGANIZATIONAL PERFORMANCE (A STUDY OF SELECTED BRANCHES OF FIRST BANK OF NIGERIA PLC, ABUJA
DR CHUKWUEMEKA GODSON EME	National Open University of Nigeria	AN ASSESSMENT OF THE IMPACT OF ENTREPRENEURSHIP DEVELOPMENT ON JOB CREATION IN NIGERIA: A STUDY OF WUSE MARKET, ABUJA



29.12.2024

TÜRKİYE Local Time: 14:30-16:30

**HEAD OF SESSION:** Associate Professor Dr. Naseem Akhter

**SESSION-1 HALL-13**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Associate Professor Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	THE ISLAMIC PERSPECTIVE ON END-OF-LIFE DECISIONS
Fikri Novrial AZHAR	Uin K.H. Abdurrahman Wahid Pekalongan, Indonesia	ISLAMIC SCIENTIFIC PARADIGM
Salako, Oluwaseun Adewale 1; Ajibade, Olalekan Eytayo	The Federal Polytechnic, Ilaro	TRADITIONAL POLITICAL SYSTEM AND DEVELOPMENT OF DEMOCRACY IN NIGERIA
Fira Aulia Hendri Hermawan Adinugraha	Uin K.H. Abdurrahman Wahid Pekalongan, Indonesia	THE VALIDITY OF THE SALE AND PURCHASE AGREEMENT WITH SHOPEE PAYLATER AS FINANCIAL TECHNOLOGY IN ISLAMIC LAW
Associate Professor Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	A RESEARCH REVIEW ORGAN DONATION AND TRANSPLANTATION FROM AN ISLAMIC PERSPECTIVE
Associate Professor Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	A RESEARCH REVIEW OF PUBLIC HEALTH ETHICS UNDER ISLAMIC CONTEXT
Associate Professor Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	A RESEARCH REVIEW OF THE END OF LIFE DECISIONS FROM AN ISLAMIC PERSPECTIVE
Rishika D Bagrecha, B.Com. Dr. Chaya Bagrecha,	Jain (deemed-to-be University), Bangalore	EXCESSIVE CREDIT CARD USAGE: A GROWING PROBLEM
Muhammad Ilham FAHMI	State Islamic University of Pekalongan, Indonesia	DOLLAR SURGE TO RP 16,500: THREAT TO INDONESIA'S ECONOMIC STABILITY
Fatima Dina RAHMADAYANTI	UIN K.H. Abdurrahman Wahid Pekalongan	INTRODUCTION TO SHARIA SAVING FOR GENERATION Z AND ALPHA
Associate Professor Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	ORGAN DONATION AND TRANSPLANTATION IN ISLAM: A REVIEW
Associate Professor Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	ETHICAL PRINCIPLES AND THE DEVELOPMENT OF PUBLIC HEALTH FACILITIES IN THE LIGHT OF ISLAMIC INJUNCTIONS



29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Valentina Marinescu****SESSION-1 HALL-14**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Victoria POSTOLACHE, PhD., associate professor Natalia BRANAȘCO, PhD., associate professor	Alecu Russo Balti State University,	THE EVOLUTION OF THE CONCEPT OF CORPORATE SOCIAL RESPONSIBILITY
Victoria POSTOLACHE, PhD., associate professor Natalia BRANAȘCO, PhD., associate professor	Alecu Russo Balti State University,	EDUCATION AS A CATALYST: ANALYZING ITS IMPACT ON ECONOMIC GROWTH AND DEVELOPMENT
Valentina Marinescu Ramona Marinache	University of Bucharest, Romania	A QUALITATIVE ASESMENT OF AI'S IMPACT ON TRANSLATORS' WORKS
Ramona Marinache Valentina Marinescu	University of Bucharest, Romania	THE FASHION DURING THE COVID19 PANDEMICS
Professor Dr. Laura Diaconu (Maxim)	"Alexandru Ioan Cuza" University of Iasi, Romania	INVESTIGATING THE SYSTEMATIC RISK IN AIRLINE INDUSTRY
Professor Dr. Laura Diaconu (Maxim) Prof. Habil. Mihai-Bogdan PETRISOR, PhD.	"Alexandru Ioan Cuza" University of Iasi, Romania	FINANCIAL INCLUSION IN EMERGING ECONOMIES. EMPIRICAL INVESTIGATION
Sara ZELLEĞ	A-Mira University of Bejaia, Algeria	SOCIAL MEDIA ADVERTISING AND THE DILEMMA OF EXCESSIVE CONSUMPTION IN ALGERIA: ANALYSIS OF CONSUMER PERCEPTION
Ramona Marinache Valentina Marinescu	University of Bucharest, Romania	MEDIA LITERCY IN THE AGE OF SOCIAL MEDIA
Ramona Marinache Valentina Marinescu	University of Bucharest, Romania	GENDER STEREOTYPE ON TWITTER
Igor DOBRAČA	Juraj Dobrila University of Pula (Croatia)	COMPARATIVE ANALYSIS OF CITIZENSHIP EDUCATION IN THE REPUBLIC OF CROATIA AND THE REPUBLIC OF SERBIA
Igor DOBRAČA Ana KOLIĆ MARKOVIĆ	Juraj Dobrila University of Pula (Croatia)	MEASURING FINANCIAL LITERACY OF 8TH GRADERS PUPILS AT JURAJ DOBRILA PRIMARY SCHOOL IN ROVINJ (CROATIA)
Ivana Dzorova, Elizabeta Popova Ramova, Vladimir Apostolov	MIT University Skopje, RN Macedonia	PHYSICAL THERAPY AND PHYSICAL ACTIVITY DURING PREGNANCY
Boni Popova Ramova 1 , Vladimir Apostolov 2 , Elizabeta Popova Ramova,	MIT University Skopje, RN Macedonia	NUTRITION CORRECTION AND PHYSICAL THERAPY EXERCISES LIKE ALTERNATIVE POSSIBILITIES TO INCREASE QUALITY OF LIFE BY CHRONIC DISEASE PATIENTS
Valentina Marinescu Ramona Marinache	University of Bucharest, Romania	MEDIA DISCOURSE ABOUT NUCLEAR WAR IN UKRAINE
Valentina Marinescu Ramona Marinache	University of Bucharest, Romania	ROMANIAN AUDIENCE AND HALLYU



29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Hendri Hermawan ADINUGRAHA****SESSION-1 HALL-15**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Uswatun Khasanah Hendri Hermawan Adinugraha	Uin K.H. Abdurrahman Wahid Pekalongan, Indonesia	The Impact Of Globalisation On International Monetary And Financial Policy : A Literatur Review
Hilya Hana Putri 1 , Izzati Rohmaniyah 2 , Naily Taufiqoh	UIN K.H. Abdurrahman Wahid Pekalongan	IMPLEMENTATION OF CLOUD COMPUTING IN ENTERPRISE DATA STORAGE: BENEFITS, RISKS, AND SECURITY STRATEGIES
Siarhei Marozau	Independent researcher,	MYKOLA YERMALOVICH: THE HISTORIAN WHO HEALED THE BELARUSIAN NATION FROM THE COMPLEX OF HISTORICAL INFERIORITY
Naeli Silfana	UIN K.H. Abdurrahman Wahid, Faculty of Islamic Economics and Business,	GENERATION Z'S KNOWLEDGE AND INTEREST IN SHARIA-BASED INVESTMENT AMONG COLLEGE STUDENTS IN PEKALONGAN
Lia Fatra Nur Laili KAMALIN	State Islamic University of Pekalongan, Indonesia	SYNERGY OF ISLAMIC FINANCE AND SUSTAINABLE ECONOMY: BUILDING AN INCLUSIVE AND ENVIRONMENTALLY FRIENDLY FUTURE
Sholikhah, M. Khairul Anan	K.H Abdurrahman Wahid State Islamic University	TAX ETHICS IN ISLAM: BETWEEN OBLIGATION AND JUSTICE SOCIAL
Dimas Mahdi FAUZAN	UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia	THE STRATEGIC ROLE OF ISLAMIC ECONOMICS IN DRIVING NATIONAL ECONOMIC GROWTH
Siti Rizkia Seprina Wulandari	UIN K.H.Abdurahman Wahid Pekalonga, Indonesia	OJK: SHARIA BANKING MUST HAVE A POSITIVE IMPACT ON COMMUNITY WELFARE
Pinky Nila NAWAWIZA	UIN K.H.Abdurahman Wahid Pekalonga, Indonesia	THE POWER OF SHARIA ECONOMY: INNOVATION AND COLLABORATION FOR THE FUTURE
Rafi PRASOJO Hendri Hermawan ADINUGRAHA	Uin K.H. Abdurrahman Wahid Pekalongan, Indonesia	The Effect Of Rice Prices As A Trigger For Inflation In Indonesia
Muh Fatkhurrozi	Uin K.H. Abdurrahman Wahid Pekalongan, Indonesia	The Benefits Of Prayer
Dwi Tika Wulan SARI, Reva VELISYA , Octavia Janate AULIANA, Saela RISQINA , Adellia Saniyatuz ZAHRO	UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia	A SCIENTIFIC REVIEW OF THE HARAM OF PORK





6. BILSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: FÖLDVÁRI, Sándor**

**SESSION-1 HALL-16**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Iosefina Blazsani-Batto, Ph.D.	Babes-Bolyai University,	MEMORY AND FORM: THE STRUCTURAL DYNAMICS OF ABDULLA'S TRILOGY
Iosefina Blazsani-Batto, Ph.D.	Babes-Bolyai University,	THREADS OF TRADITION: EXPLORING AZERBAIJANI WEAVING AS A SYMBOL OF CULTURAL IDENTITY
Prof. Dr. Mohammed Waheeb	Hashemite University, Jordan	THE JOURNEYS OF PROPHET COMPANIONS FROM MECCA & MADĪNAH TO JERUSALEM & BĪLAD AL-SHAM THROUGH JORDAN(AL-OMARĪ ROUTE)
Prof Dr Mohannad Tarrad Prof Dr Mohammed Waheeb Nivin Abu Shawish	Al al-Bayt University, The Hashemite University.	NEW ARAB ELAF ROAD (NAER)2025- 2030
Irina-Ana DROBOT	Technical University of Civil Engineering Bucharest,	ASPECTS COVERED BY THE EUROPEAN UNION TRANSPORT POLICY
Irina-Ana DROBOT	Technical University of Civil Engineering Bucharest,	WASSAILING IN ENGLAND AND CAROLING IN ROMANIA
doc. dr. sci. Džana Rahimić Ramić	University of Sarajevo osnia and Herzegovina	THE BASIC QUESTION OF MAN: METAPHYSICAL ACTION AND PRODUCTION
FÖLDVÁRI, Sándor	Debrecen University,	WHY PREFER POLAND TO HUNGARY AS FOR UKRAINE
FÖLDVÁRI, Sándor	Debrecen University,	HISTORICAL BACKGROUND TO THE RUSSIAN IMPERIALISM
FÖLDVÁRI, Sándor	Debrecen University,	COMMONWEALTH VERSUS TSARDOM: REPUBLICAN AND IMPERIAL PARADIGMS IN THE HISTORIOGRAPHY OF THE BYZANTINE-RITE CULTURES IN EASTERN EUROPE
Iosefina Blazsani-Batto, Ph.D.	Babes-Bolyai University,	AZERBAIJAN'S EVOLVING ENERGY LANDSCAPE
Iosefina Blazsani-Batto, Ph.D. Mirela Maria Iancu	Babes-Bolyai University,	TRANSFORMING EDUCATION IN ROMANIA: ANALYZING THE IMPACT OF THE CRED PROJECT
Dr hc Vicente Pironti	OPEN UNIVERSITY HUMANIZA Brazil	A NEW PHILOSOPHY FOR HEALTH: THE SENSE OF LIFE, DEATH, AND & INFINITANDO& AS COMPLEMENTARY PARAMETERS FOR HEALTH IN MEDICINE AND SOCIETY
Dr hc Vicente Pironti	OPEN UNIVERSITY HUMANIZA Brazil	ASAVIKA SCIENCE: THE CONJUNCTION OF THE INFINITE AND THE FINITE – WINGS FOR THE EVOLUTIONARY POTENTIAL OF THE HUMAN SPIRIT
Irina-Ana DROBOT	Technical University of Civil Engineering Bucharest,	EUROPEAN UNION CONSUMER PROTECTION POLICIES
Irina-Ana DROBOT	Technical University of Civil Engineering Bucharest,	FREEDOM OF EXPRESSION: BETWEEN RIGHTS AND SAFETY



6. BILSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Associate Professor Dr. Rozina Khattak**

**SESSION-1 HALL-17**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Shehla Khalid, Noor Fatima, Nasir Rasool*, Muhammad Zubair*	Government College University	SYNTHESIS AND EXPLOITATION OF BIO-POTENTIAL OF FURAN AND THIOPHENE-CONTAINING DERIVATIVES VIA CROSS-COUPLING REACTIONS
Associate Professor Dr. Rozina Khattak	Shaheed Benazir Bhutto Women University,	EXPLORING ENVIRONMENTAL BENEFITS OF HOMOGENOUS CATALYSIS IN DSSCS
Associate Professor Dr. Rozina Khattak	Shaheed Benazir Bhutto Women University,	REUSABLE BIODECOMPOSITE FOR EFFICIENT REMOVAL OF ANILINE GREEN DYE
Associate Professor Dr. Rozina Khattak	Shaheed Benazir Bhutto Women University,	NON-TOXIC SOLVENTS: A PATH TO MORE EFFICIENT DSSC SYSTEMS
Associate Professor Dr. Rozina Khattak	Shaheed Benazir Bhutto Women University,	PREPARATION, CHARACTERIZATION AND APPLICATION OF TERNARY PHOTOCATALYST FOR DEGRADATION OF TOXIC DYES AND WASTEWATER TREATMENT
Asad Ullah1*	University of Veterinary and Animal Sciences, Lahore, Pakistan	CARCINOGENIC POTENTIAL OF PORPHYROMONAS AND FUSOBACTERIUM AND THEIR ROLE IN PROMOTING ORAL SQUAMOUS CELL CARCINOMA WITHIN PAKISTANI POPULATION: A REVIEW
Associate Professor Dr. Rozina Khattak	Shaheed Benazir Bhutto Women University,	INVESTIGATING ALTERNATIVES TO IODIDE IN SOLAR CELL CHEMISTRY
Assoc. Prof. Dr Rozina Khattak	Shaheed Benazir Bhutto Women University,	PRACTICAL APPLICATIONS OF SUGARCANE BAGASSE IN WASTEWATER TREATMENT
Assoc. Prof. Dr Rozina Khattak	Shaheed Benazir Bhutto Women University,	PRACTICAL APPLICATIONS OF SUGARCANE BAGASSE IN WASTEWATER TREATMENT
Jeevan M		The Role of Nanomedicine in Targeted Drug Delivery for Cancer Treatment





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TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Muhammad Mateen Afzal Awan**

**SESSION 1- HALL-18**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	GENERATIVE AI IN RENEWABLE ENERGY: TRANSFORMING DESIGN AND OPTIMIZATION
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	OPTIMIZED GENETIC ALGORITHM FOR MAXIMUM POWER POINT TRACKING IN PHOTOVOLTAIC SYSTEMS
Nizamettin TURAN	Siirt Üniversitesi	USE OF ALTERNATIVE ROUGHAGE SOURCES IN ANIMAL NUTRITION
Melviani , Duryat dan Melya Riniarti	University of Lampung,	ETHNOBOTANICAL STUDY OF MANGROVE UTILIZATION AS FOOD IN PESAWARAN DISTRICT, LAMPUNG PROVINCE
Melviani , Duryat 2 dan Melya Riniarti	University of Lampung,	ETHNOBOTANICAL STUDY OF MANGROVE UTILIZATION AS FOOD IN PESAWARAN DISTRICT, LAMPUNG PROVINCE
Azzoune asmaa 1-2 , dahmani chahinez amira 2-3 , boudjema abdallah	Ecole Supérieure en Sciences Biologiques d'Oran Université Abdelhamid Ibn Badis Mostaganem	ASSOCIATION OF IL23R RS11209026 POLYMORPHISM TO ANKYLOSING SPONDYLITIS SUSCEPTIBILITY IN ALGERIAN POPULATION
Asmaa Mansouri 1 , Saadia Hellal 2 , A. Kerfouf	University center of Naama, Algeria	BENTHIC MARINE MACROALGAE IN ALGERIAN WEST COAST
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	GENERATIVE AI FOR MAXIMUM POWER POINT TRACKING (MPPT) IN SOLAR PHOTOVOLTAIC SYSTEMS
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	ADVANCING MAXIMUM POWER POINT TRACKING (MPPT) IN SOLAR PHOTOVOLTAIC SYSTEMS USING GENERATIVE AI TECHNIQUES
VIGNESH K Dr. K. SELVAM ARSHA G	Palar Agricultural College, Ambur	STUDIES ON INTEGRATED PLANT DISEASE MANAGEMENT ON MACROPHOMINA PHASEOLINA CAUSES DRY ROOT ROT IN GROUNDNUT (ARACHIS HYPOGAEA L.)
VIGNESH K Dr. K. SELVAM ARSHA G	Palar Agricultural College, Ambur	EFFECT OF NEW GENERATION FUNGICIDES ON THE GROWTH OF ASPERGILLUS NIGER CAUSES COLLAR ROT IN GROUNDNUT (ARACHIS HYPOGAEA L.)
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	ADVANCEMENTS IN PHOTOVOLTAIC EFFICIENCY: INNOVATIONS AND APPLICATIONS
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	ORGANIC PHOTOVOLTAIC CELLS: A SUSTAINABLE APPROACH TO SOLAR ENERGY



29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Dr Nabila Sher****SESSION-1 HALL-19**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
EL HAJJARI Salma	Al Hoceima, Morocco; Applied Chemistry;	DETECTION, QUANTIFICATION, AND MANAGEMENT OF ANTIBIOTIC RESIDUES IN DRINKING WATER AND THEIR IMPACT ON ANTIBIOTIC RESISTANCE SPREAD IN SEMI-ARID REGIONS
Abdelbasset TAMERSIT , Soumia MOUFFOUK 1 , Chaima MOUFFOUK Hamada HABA	Batna-1 University, University of Batna 2 Mustapha Benboulaid, Algeria.	STEROİDAL ANTI-İNFLAMMATORY COMPOUNDS FROM HALOGETON SATIVUS, A MOLECULAR DOCKİNG STUDY
Abdelbasset TAMERSIT , Soumia MOUFFOUK, Chaima MOUFFOUK Hamada HABA	Batna-1 University, University of Batna 2 Mustapha Benboulaid, Algeria.	CHEMICAL COMPOSITION, DRUG LIKENESS AND ADME-TOXİCİTY PREDİCTION OF THE SPECİES HALOGETON SATIVUS
Abdelbasset TAMERSIT 1 *, Soumia MOUFFOUK 1 , Chaima MOUFFOUK 1,2 , Hamada HABA	Batna-1 University, University of Batna 2 Mustapha Benboulaid, Algeria.	MOLECULAR DOCKİNG AND ADME-TOX STUDİES OF ANTIĐİABETİC AGENTSİSOLATED FROM HALOGETON SATIVUS
Zohaib Hassan Sain	Superior University, Pakistan	BLENDED LEARNING: A NEW CHALLENGE FOR PAKISTANI UNIVERSITY STUDENTS'
Zohaib Hassan Sain	Superior University, Pakistan	STUDENTS ASSESSMENT OF ONLINE EDUCATION DURING THE COVID-19 EPIDEMIC: AN ANALYSIS
Abdelbasset TAMERSIT 1 *, Soumia MOUFFOUK 1 , Chaima MOUFFOUK 1,2 , Hamada HABA	Batna-1 University, University of Batna 2 Mustapha Benboulaid,	İN SİLİCO HEPATOPROTECTİVE POTENTIAL OF HALOGETON SATIVUS: A PROMİSİNG AGENTS FOR COMBATİNG HEPATOTOXİCİTY
Hassan Aliyu, Amina M. Chado, Umar Sarkin-Bauchi Idris, and Labake Ajoke Fadipe	Sokoto State University (SSU), Nigeria	IMPLICATION OF REAL-LIFE APPLICATION CHEMICAL CONCEPTS ON SUSTAINABLE CHEMISTRY EDUCATION: A META-ANALYSIS
Indira Kuanyshbek, Danelya Latipova	Kh. Dosmukhamedov Atyrau University, Atyrau, Kazakhstan	Integration in Chemistry Lessons: Enhancing Interdisciplinary Learning



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TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Dr.M.K.GANESHAN**

**SESSION-1 HALL-20**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr.M.K.GANESHAN	MIET Engineering College	ARTIFICIAL INTELLIGENCE-DRIVEN RECRUITMENT: OPPORTUNITIES AND CHALLENGES IN MODERN HR PRACTICES
RAHIMI Abdelmejid; EL MJIRI Ikram; BOULANOUAR Wardia; SKAKNI Omar and BOUNIF Mohamed	Chouaib Doukkali University, Morocco.	APPLICATION OF MACHINE LEARNING TO ASSESS LAND USE IN THE TIOUT OASIS (TAROUDANT REGION, MOROCCO)
Mas'udd Kasimu Gayam 1 , Musa Adamu Keffi 1 , Ahmed Yarima 2 , Hajara Ibrahim Jubril	Mustapha Agwai Polytechnic Lafia NASARAWA STATE NIGERIA. Aliko Dangote University of Science and Technology Wudil Kano State Nigeria.	SSESSMENT OF EFFECTIVE MANAGEMENT OF RECREATIONAL FACILITIES IN MUSTAPHA AGWAI POLYTECHNIC LAFIA, NASARAWA STATE NIGERIA
JAHNAVI D.M	Brindavan College of Engineering,	GENERATION OF ELECTRICITY FROM PIEZOELECTRIC TILES
JAHNAVI D.M	Brindavan College of Engineering,	V2V COMMUNICATION USING RADIO FREQUENCY SENSOR
S. Dahri 1 , A. Jabar 1,2,* , L. Bahmad 3 , L. B. Drissi 1 , and R. Ahl Laamara	Mohammed V University in Rabat, Morocco	FIRST PRINCIPLES INVESTIGATION OF STRUCTURAL, ELASTIC, THERMOELECTRIC, ELECTRONIC AND OPTICAL PROPERTIES XH 3 (X=AC, LA) FOR HYDROGEN STORAGE
BOBAN MATHEWS	Brindavan College of Engineering,	IOT WEATHER STATION
Hassan Aliyu, Corrienna Abdul Talib and Labake Ajoke Fadipe	Sokoto State University	DETERMINING THE NEED FOR DEVELOPING DIGITAL COURSEWARE FOR REAL-LIFE APPLICATIONS CHEMICAL CONCEPTS
Dr. YACINI Soukaina, Prof. BALAADICH Farah,	Sultan Moulay Slimane University.	ON THE EXISTENCE RESULT FOR SOME NONLINEAR PARABOLIC PROBLEMS
Mohammed Bentahar Nouredine Mahmoudi Moulai Arbi Youcef	University Tahar Moulay University,	ANALYSIS AND MODELING TO STUDY THE DIFFERENT ENERGIES OF INITIAL CRACK USING THE FINITE ELEMENT METHOD OF A STRUCTURE
El Mjiri Ikram, Boulanouar Wardia, Rahimi Abdelmejid and Bounif Mohamed.		MACHINE LEARNING CONTRIBUTIONS TO LAND USE MAPPING IN THE URBAN AND PERI-URBAN AREAS OF MARRAKECH CITY (MOROCCO)
Scholar. Tabish Naseem Dr. Jawad Ali	Kohat University of Science and Technology, KPK, Pakistan	DECISION-SUPPORT APPROACH WITH SCHWEIZER-SKLAR WEIGHTED AGGREGATION UNDER CIRCULAR Q-RUNG ORTHOPAIR FUZZY SETS.



29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Dr. Favour C. Uroko****SESSION-1 HALL-21**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Prof. Dr. Yuriy V. Lykholat PhD, Iryna M. Kofan PhD, Tetyana Y. Lykholat Prof. Dr. Olena A. Lykholat Lecturer, Maksim O. Kvitko PhD, Anatoliy M. Kabar PhD, Pavlo P. Nechypurenko	Oles Honchar Dnipro National University, Dnipro, Ukraine University of Customs and Finance, Dnipro, Ukraine Kryvyi Rih State Pedagogical University,	OUT-OF-SCHOOL BIOLOGICAL EDUCATION OF STUDENTS AT THE BOTANICAL GARDEN
Dr. Housam Ibrahim	Free Aleppo University - Azaz - Syria	PROBLEMS FACING FIRST CYCLE TEACHER AND THEIR IMPACT ON CHILDRENS RIGHT TO EDUCATION IN NORTHERN SYRIA
Anana MARIAM, (Ph. D) Abraham NGALOUO-ANTSO	Mountain Top University Université Marien Nguabi Republic of Congo	“LANGUAGE, SOCIÉTAL SECURITY AND STABILİTY: A STUDY OF THE EXPRESSİVE FORMS USED BY INFLUENTIAL PEOPLE ON TELEVISION PROGRAMMES İN NİGERİA AND THE REPUBLIC OF CONGO”
Lindita Ademi, Valbon Ademi,	University of Tetovo, North Macedonia	“SPEECH SYNTHESIS TECHNOLOGİES”
Eva KHAERİYAH	State Islamic University of KH Abdurrahman Wahid Pekalongan	THE REAL STEPS BEHİND THE CALL FOR RELİGİOUS TOLERANCE AND MODERATION
Ezekiel Pius Nyatirimoh,	Federal University of Technology,	EFFECTS MOODLE PLATFORM-ENHANCED INSTRUCTION ON MOTIVATION AND INTEREST AMONG SECONDARY SCHOOL CHEMISTRY STUDENTS IN TARABA STATE NIGERIA
Lindita Ademi, Valbon Ademi	University of Tetovo, North Macedonia	USER INTERFACES FOR BLİND AND VİSİON IMPAİRED PEOPLE
Dr. Favour C. Uroko	University of Nigeria Nsukka	DELİVER LİKE THE HEBREW WOMEN: THE EPİSTEMOLOGY OF FAİTH AND THE FATE OF EXPECTANT WOMEN İN PENTECOSTAL CHURCHES İN NİGERİA
Sviatlana Marozava	Independent researcher,	THE BREST CHURCH UNION OF 1596 İN MODERN BELARUSIAN HISTORİOGRAPHY: MAIN CONCEPTUAL APPROACHES
Dr. hab., Professor Sviatlana Marozava	Independent researcher,	FINANCIAL ASPECT OF THE İNVENTION OF BOOK PRINTING AND FRANCYSK SKARYNA – ENTREPRENEUR
Umar Aliyu Aminu Adamu Ahmed Mohammed Nura Musa Abdulbaisu Mohammed Rabi	Federal Polytechnic Kaltungo, Gombe State, Nigeria	DİGİTAL LİTERACY AS A CORNERSTONE: İNTEGRATING İCT SKİLLS İNTO LİBRARY EDUCATION PROGRAMS
Ajayi, Olayemi T.	The Federal Polytechnic, Iloro,	CREATIVE REFLECTIONS ON RECRUITMENT STANDARDS: RETHİNKİNG COMPETENCE İN ORGANİZATIONAL HİRING PRACTİCES





29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Prof. Dr Abdullah Yar****SESSION-1 HALL-22**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Rudi Rubijaya , Iwan Setiawan , Tuti Karyani, Ristina Siti Sundari	Universitas Padjadjaran. Universitas Perjuangan Tasikmalaya. Indonesia.	REDISTRIBUTION OF FORMER LAND USE RIGHT OF PT MALOYA ON AGRARIAN CONFLICT RESOLUTION IN CIAMIS REGENCY IN THE SUSTAINABLE AGRARIAN REFORM PROGRAM
AhmedKerfouf , Hbib Meliani , Faiza Bennabi , Patricio R. De Los Rios-Escalante, Carlos Esse	University of DjillaliLiabes, Algeria	MARINE MOLLUSCS (BIVAVIA AND GASTEROPODA) FROM ALGERIAN WEST COAST
Ahmed Kerfouf, Hbib Meliani , Sabrine Boucetta , Bachir Doukani	University of Sidi Bel Abbès,	ANALYSIS OF MARINE SEDIMENTS FROM THE GULF OF ORAN (ALGERIAN WESTCOAST)
Naimat Ullah Pro Dr Abdullah Yar	Kohat University of Science and Technology, Kohat	MAGNETO-OPTICAL CONDUCTIVITY AND GIANT FARADAY-KERR ROTATION IN 8-PMMN FLOQUET BOROPHENE
Djohaina Makhlouf , Soumia Mouffouk , Chaima Mouffouk Hamada Haba	Batna-1 University, University of Batna 2 Mustapha Benboulaïd,	BOTANICAL DESCRIPTION, PHYTOCHEMICAL SCREENING, ISOLATION OF STEROLS AND EVALUATION OF THE CYTOTOXICITY OF THE PETROLEUM ETHER EXTRACT FROM MOLTKIA CILIATA
Djohaina Makhlouf , Soumia Mouffouk , Chaima Mouffouk and Hamada Haba	Batna-1 University, University of Batna 2 Mustapha Benboulaïd,	PHYTOCONSTITUENTS OF THE MEDICINAL PLANT PHILLYREA ANGUSTIFOLIA
Nura Abubakar Allumi, Nor Hasni Osman, Md. Abdul Kafi, Mazhar Abbas, Mohd Kamarul Irwan Bin Abdul Rahim, 3 Muhammad Zayyanu	Universiti Utara Malaysia University Sokoto	SINO-NIGERIAN PARTNERSHIPS FOR SUSTAINABLE DEVELOPMENT: ADVANCING RENEWABLE ENERGY AND AGRICULTURAL MODERNIZATION
Jeton Halili Fatjona Isufaj Skender Demaku Shkurtesa Krasniqi Arbnora Aliu Donika Sylejmani	University of Prishtina "Hasan Prishtina",	CONTAMINATION LEVEL AND ECOLOGICAL RISK ASSESSMENT OF POTENTIALLY TOXIC METALS IN WATER AND SEDIMENT OF MIRUSHE WATERFALL IN MUNICIPALITY OF MALI SHEVA-KOSOVO
Ridwan Mukaila	University of Nigeria, Nsukka, Enugu State,	EXPLORING THE ECONOMIC PERFORMANCE OF WOMEN SMALLHOLDER BAMBARA NUT FARMERS IN NIGERIA
Safae KADIMI SKALLI Adil CHAKIR Mohammed OUBAHOU Rachid FAKHREDDINE Boubker MEHDAOUI My Rachid TIGHA A. AATIQI and Abdslam EL BOUARI	University Hassan II of Casablanca, Morocco.	SYNTHESIS, CRYSTAL STRUCTURE, MORPHOLOGY, VIBRATIONAL STUDY AND OPTICAL PROPERTIES OF TWO ORTHOPHOSPHATES A(SB0.50 AL0.50)(PO4)2 (A= BA, PB).
Juliana Tomovska	University St. Kliment Ohridski	EXAMINATION OF THE CHEMICAL COMPOSITION AND ELEMENTS IN COW'S MILK



29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Subhashish Dey**

**SESSION-1 HALL-23**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Boulanouar Wardia; El Mjiri Ikram; Rahimi Abdelmejid and Bounif Mohamed.	Laboratory of Geodynamics and Geomatics;	EROSION MODELING AND ASSESSMENT USING GOOGLE EARTH ENGINE AND THE MUSLE EQUATION: APPLICATION TO THE MOULAY YOUSSEF DAM AREA, MOROCCO
Karim Kreit; Abdeslem Hafid Bentbib; Oumaima Benchettou,	Cadi Ayyad university, Marrakech	QUATERNIONIC SVD DECOMPOSITION FOR IMAGE COMPRESSION AND COMPLETION
Lubiqā Bashir 1 , Muhammad Bilal 1 , Nasir Rasool	Government College University Faisalabad,	DESIGN AND SYNTHESIS OF 5-BROMO-N-ALKYLTHIOPHENE-2-SULFONAMIDES TARGETING NDM-B-LACTAMASE-PRODUCING KLEBSIELLA PNEUMONIAE ST147
Ben O. J. 1 and Adagba T. T.	Federal University,	DETERMINATION OF THE TRANSITIVITY AND PRIMITIVITY OF DIHEDRAL GROUPS OF PRIME DEGREES THAT ARE NOT P-GROUPS USING NUMERICAL APPROACH
Gjylai Alija 1 , Drita Yzeiri- Havziu 2 , Arbnore Nazifi 2 , Hanife Rustemi-Ahmeti 2	University of Tetova, Tetovo, R.of N. Macedonia	HYPERVITAMINOSIS A OR HYPOVITAMINOSIS A: A GLOBAL CONCERN
Mohammed Habib DAOUDI	Belhadj Bouchaib University, Algeria	PARAMETRIC STUDY OF MODAL ANALYSIS OF THE INTERACTION OF THE BENI BAHDEL DAM SYSTEM WITH THE WATER RESERVOIR
Mohammed Habib DAOUDI	Belhadj Bouchaib University, Algeria	COMPARATIVE STUDY OF UNDAMPED MODAL ANALYSIS OF INTERACTION WITH WATER RESERVOIR AND ROCK FOUNDATION OF BENI BAHDEL DAM SYSTEM
Chahinez Amira DAHMANI Abdallah BOUDJEMA	University of Sciences and Technologies of ORAN (USTO), Algeria.	Immunogenetic Study Of Ankylosing Spondylarthritis In The Population Of Western Algeria
N. ELHARRAR AND S. AIT MESSAAD	Institut Supérieur des Professions Infirmières et Techniques de Santé de Marrakech, Annexe SAFI. Ministère de la Santé et de la Protection Sociale .	MODELING OF ERROR PROPAGATION
Subhashish Dey	Seshadri Rao Gudlavalluru Engineering College,	EARTQUAKE ANALYSIS OF RESTING BUILDING ON THE HILLY AREAS
Subhashish Dey	Seshadri Rao Gudlavalluru Engineering College,	STUDY ON STRENGTH PROPERTIES OF CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY MARBLE POWDER FOR USAGE IN RIGID PAVEMENT
Subhashish Dey	Seshadri Rao Gudlavalluru Engineering College,	A STUDY ON RAILWAY ROAD UNDER BRIDGE CONSTRUCTION AND ITS COURSE OF ACTION USING BOX PUSHING TECHNIQUE





29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION: Dr. Housam Ibrahim**

**SESSION-1 HALL-24**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	ENHANCING PEROVSKITE PHOTOVOLTAIC CELL EFFICIENCY WITH GENERATIVE AI
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	OPTIMIZING PARTICLE SWARM OPTIMIZATION ALGORITHM FOR MAXIMUM POWER POINT TRACKING (MPPT) IN PHOTOVOLTAIC SYSTEMS
Umar Aliyu Mohammed Nura Musa Abdulbaisu Muhammed Rabi Jibril Hussein Kawure Usman Yahya Ibrahim Aminu Adamu Ahmed	Federal Polytechnic Kaltungo, Gombe State, Nigeria	OPEN ACCESS AND THE DIGITAL DIVIDE: CHALLENGES AND OPPORTUNITIES FOR LIBRARIES IN THE ICT ERA
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	IMPROVING MPPT EFFICIENCY WITH MODIFIED PARTICLE SWARM OPTIMIZATION FOR PV SYSTEMS
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	COST REDUCTION IN ORGANIC PHOTOVOLTAIC CELLS USING GENERATIVE AI
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	OPTIMIZING ORGANIC PHOTOVOLTAIC CELL EFFICIENCY USING GENERATIVE AI
Dr. Housam Ibrahim	Free Aleppo University	SUICIDAL TENDENCIES IN LIGHT OF SOME VARIABLES IN NORTHERN
RAHIMI Abdelmejid; EL MJIRI Ikram; BOULANOUAR Wardia; SKAKNI Omar and BOUNIF Mohamed	Chouaib Doukkali University, El Jadida, Morocco.	MAPPING AND ASSESSMENT OF URBAN SPRAWL USING MACHINE LEARNING ALGORITHMS (SVM AND RF) ON LANDSAT IMAGES: EXAMPLE OF THE CITY OF MOHAMMEDIA AND ITS OUTSKIRTS (MOROCCO)
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	OPTIMIZING MAXIMUM POWER POINT TRACKING IN PHOTOVOLTAIC SYSTEMS USING ARTIFICIAL NEURAL NETWORKS
Muhammad Mateen Afzal Awan	University of Management and Technology Lahore-Sialkot	ENHANCING MAXIMUM POWER POINT TRACKING IN PHOTOVOLTAIC SYSTEMS USING GENETIC ALGORITHMS



29.12.2024

TÜRKİYE Local Time: 15:30-17:30

HEAD OF SESSION: MUHAMMAD FAISAL

SESSION-1 HALL-25

AUTHORS	AFFILIATION	TOPIC TITLE
Sahnoun ZENGAH1 , Mohammed Mokhtar BOUZIANE2 , Rachid SAHNOUN1	University of Mustafa Stambouli, Mascara, Algeria,	FATIGUE LIFE PREDICTION UNDER RANDOM LOADING THROUGH INTEGRATION OF THE RAINFLOW COUNTING METHOD
MUHAMMAD FAISAL	MIS/IT Specialist in Ministry of Safron Pakistan	CTIO CHIEF INFORMATION TECHNOLOGY OFFICER WORK IN ASSET MANAGEMENT INFORMATION SYSTEM AND WATER BILLING WITH DIGITIZED BILL THEN WHAT WORK REQUIRED FOR THIS POSITION
Dr. Muhammad Umar Bello MAS'; UDD KASIMU GAYAM Musa Adamu Keffi Ahmed Yarima	Abubakar Tafawa Balewa University (ATBU),	IMPACT OF HOUSING PERFORMANCE ON PUBLIC HOUSING DEVELOPMENT DAMATURU, LAFIA STATE
Noureddine Lebrini 1 *, Mohammed Bousseta 1 , Said Elmassi 1 , Mustapha Beraich 1,2 , Lahcen Nkhaili	Cadi Ayyad University, Marrakech, Morocco.	EFFECT OF COPPER DOPING ON THE PHYSICAL AND CHEMICAL PROPERTIES OF NICKEL SULFIDE THIN FILMS
Associate Professor Dr. Rozina Khattak	Shaheed Benazir Bhutto Women University,	MECHANISTIC STUDY OF FERRICYPHEN OXIDIZING IODIDE IN WATER
Associate Professor Dr. Rozina Khattak	Shaheed Benazir Bhutto Women University,	VISIBLE-LIGHT PHOTOCATALYSIS: BREAKTHROUGH IN ORGANIC POLLUTANT REMOVAL
Ayeshsa Amin 1 , Sadia Afsheen 1 , Aysha Malik	Government College University Faisalabad, Pakistan	THEORETICAL INVESTIGATION OF HETEROCYCLIC CARBOXAMIDES
Rudi Rubijaya, Iwan Setiawan , Mahfud Arifin, Achmad Choibar Tridakusuma, Ristina Siti Sundari	Universitas Padjadjaran. Jl. Bandung-Sumedang	SUSTAINABLE AGRARIAN REFORM: CONFLICT RESOLUTION BY REDISTRIBUTION FORMER LAND USE RIGHT IN CIANJUR, WEST JAVA
MUHAMMAD FAISAL	MIS/IT Specialist in Ministry of Safron Pakistan	CHALLENGES AND LEGAL PROTECTIONS FOR RELIGIOUS MINORITIES IN PAKISTAN A CRITICAL ANALYSIS
Nata Rosalia	Universitas Islam Negeri Pekalongan	TANTANGAN DAN SOLUSI DALAM PENYELESAIAN SENGKETA EKONOMI SYARI'AH DI INDONESIA: TINJAUAN TERHADAP PROSEDUR DAN PRAKTIK HUKUM
Biletska Anna Olena Lykholat	Jean-François Champollion National University, Ukraine,	IMPACT OF A MINE-BLAST INJURY ON A MENTAL HEALTH OF UKRAINIAN COMBATANTS. PREVENTIVE AND PSYCHOEDUCATIONAL MEASURE
BERTA PUTRI	University of Lampung, Agriculture (Bandar Lampung , Indonesia	SEAWEED FARMING IN SOUTH LAMPUNG: TRENDS IN PRODUCTION VOLUME AND ECONOMIC VALUE (2019-2024)



29.12.2024

TÜRKİYE Local Time: 15:30-17:30

**HEAD OF SESSION:** Assoc. Prof., Ihor Ponomarenko**SESSION-1 HALL-26**

<b>AUTHORS</b>	<b>AFFILIATION</b>	<b>TOPIC TITLE</b>
Dr. Rajiya Sultan	Department of Public Administration HPU	ANALYZING THE IMPACT OF GLOBALIZATION ON ECONOMIC INEQUALITY ACROSS DEVELOPED AND DEVELOPING NATIONS
Dr.M.K.GANESHAN	MIET Engineering College	EMPLOYEE ENGAGEMENT IN THE DIGITAL AGE: ONLINE PLATFORMS AND APPLICATIONS
Suci Fitria Safira 1 , Imahda Khoiri Furqon	State Islamic University K.H. Abdurrahman Wahid Pekalongan,	LUXURY GOODS SALES TAX (PPNBM): AN ANALYSIS OF ITS IMPACT ON PURCHASING POWER OF PUBLIC CONSUMPTION
Balogun, Sherif Babajide & Fatogun, Olukunle Ibukun	The Federal Polytechnic, Ilaro, Ogun State	AUDIT INDEPENDENCE AND FINANCIAL REPORTING QUALITY OF LISTED MANUFACTURING COMPANIES IN NIGERIA
Hilya Hana Putri 1 , Izzati Rohmaniyah 2 , Nailly Taufiqoh	UIN K.H. Abdurrahman Wahid Pekalongan	IMPLEMENTATION OF CLOUD COMPUTING IN ENTERPRISE DATA STORAGE: BENEFITS, RISKS, AND SECURITY STRATEGIES
Kamal koohi	Univercity of Tabriz,	WOMAN BODY, SOCIETY AND CULTURE
Assoc. Prof. Dr. Plamen Iliev	New Bulgarian University	ACCOUNTING, DIGITIZATION AND CONTROL
Dr. Blerina Xhelaj	University "Ismail Qemali" Vlora, Albania	THE EDUCATIONAL ISSUE IN THE PERIOD OF AHMET ZOGU IN ALBANIA
Dr.Alketa Caushi,	University, Sports University of Tirana,	THE ROLE OF STEP AEROBICS IN ENHANCING PHYSICAL FITNESS AND PROMOTING HEALTHY LIFESTYLES ACROSS AGE GROUPS".
Vidia Sinta Hapsari, Sholikhah	K.H Abdurrahman Wahid State Islamic University	THE ROLE OF PUBLIC RELATIONS IN COMMUNICATION CRISIS IN THE ERA OF SOCIETY 5.0
Prof. Dr. Olena A. Lykholat Master Anastasia O. Proyavina PhD, Tetyana Y. Lykholat Lecturer, Maksim O. Kvitko Prof. Dr. Yuriy V. Lykholat	University of Customs and Finance, Dnipro, Ukraine Oles Honchar Dnipro National University,	COGNITIVE BEHAVIORAL THERAPY FOR ANXIETY AND DEPRESSION
PhD, Oleg M. Marenkov PhD, Tetyana Y. Lykholat Prof. Dr. Olena A. Lykholat PhD, Oleh S. Nesterenko Lecturer, Maksim O. Kvitko Prof. Dr. Yuriy V. Lykholat	Oles Honchar Dnipro National University, University of Customs and Finance, Dnipro, Ukraine	TOXICOLOGICAL CHARACTERISTICS OF THE STATE OF BIOCONOSES OF THE ZAPORIZHKA WATER RESERVOIR IN THE AQUATIC AREA OF THE PRIDNIPROVS'KA THERMAL POWER PLANT
Sima Shoghi Dr. Alireza Moghaddasi	International University, Mashhad, Iran	SOCIAL CUSTOMER RELATIONSHIP MANAGEMENT TECHNIQUES AND PRINCIPLES
Neda Daliri Quchan Atiq Dr. Alireza Moghaddasi	International University, Mashhad, Iran	IMPLEMENTING THE ELECTRONIC CITY; A NEW APPROACH TO URBAN MANAGEMENT
Assoc. Prof., Ihor Ponomarenko PhD Stud., Dmytro Ponomarenko	State University of Trade and Economics,	OPTIMIZING MARKETING WITH DIGITAL TECHNOLOGIES



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE









güleri kartal beklenen odasına girdi Ana Oturma Odası 21 DÖNÜŞÜMÜ

GRİT ŞİPİN Gözetile

### SONUÇ

- Sosyal medya uygulamalarının az maliyetli oluğu, bireylere anında erişimin sağlanması, influencer pazarlamayı markalar açısından cazip kılmıştır.
- Influencer pazarlamayı sadece bir reklam aracı olarak değil aynı zamanda dijitalleşen dünyada bireylerin satın alma kararlarını etkileyen önemli bir pazarlama stratejisi olarak düşünmek gerekmektedir.
- İşletmeler influencer pazarlamayı sayesinde, tüketicilerin influencerlarla olan güven duygusunu inceleyip sadece satışları yükseltmekle kalmayıp ayrıca pazardaki marka algısını ve mevcut konumunu geliştirmeye çalışmaktadırlar.

Ha U- İsmail İbrahim Mığı Sel

MALLOZ Ceren Doğan Session-1- Hall 2 Sadegül Durğun

SESSION-1 Hall 2 ELVA KIRILMAZ ELMER ZAKİYE AYDEMİR

Sev

Video

Katılımcılar

Sohbet

Teşekkürler

Paylaş

Uygulamalar

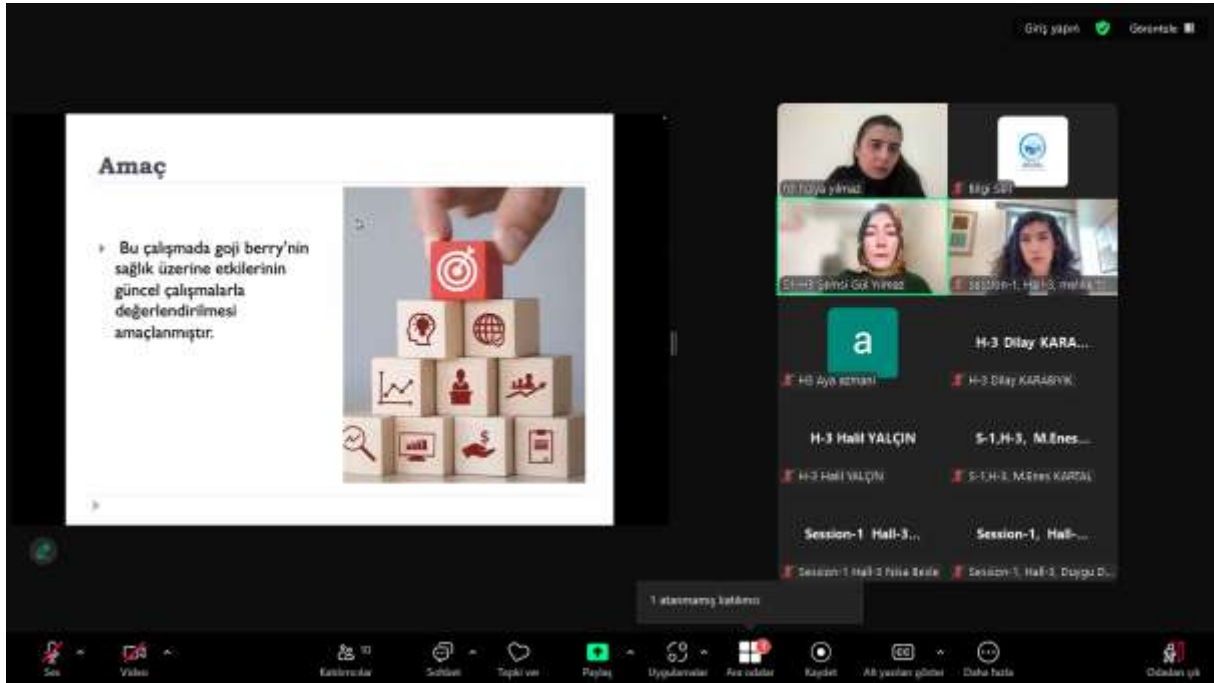
Arayıcılar

Kayıt

Ab yapma özelliği

Daha fazla


Özellikler



GRİT ŞİPİN Gözetile

### Amaç

Bu çalışmada goji berry'nin sağlık üzerine etkilerinin güncel çalışmalarla değerlendirilmesi amaçlanmıştır.



1 atamamıy sistemi

GRİT ŞİPİN Mığı Sel

ELMER ZAKİYE AYDEMİR Session-1, Hall 3, Merve T...

H-3 Dilay KARA...

H-3 Ayşe İsmail

H-3 Dilay KARABAYK...

H-3 Hall YALÇIN

S-1, H-3, M. Enes...

H-3 Hall YALÇIN

S-1, H-3, M. Enes KARAL...

Session-1 Hall-3...

Session-1, Hall-3, Duygu D...

Sev

Video

Katılımcılar

Sohbet

Teşekkürler

Paylaş

Uygulamalar

Arayıcılar

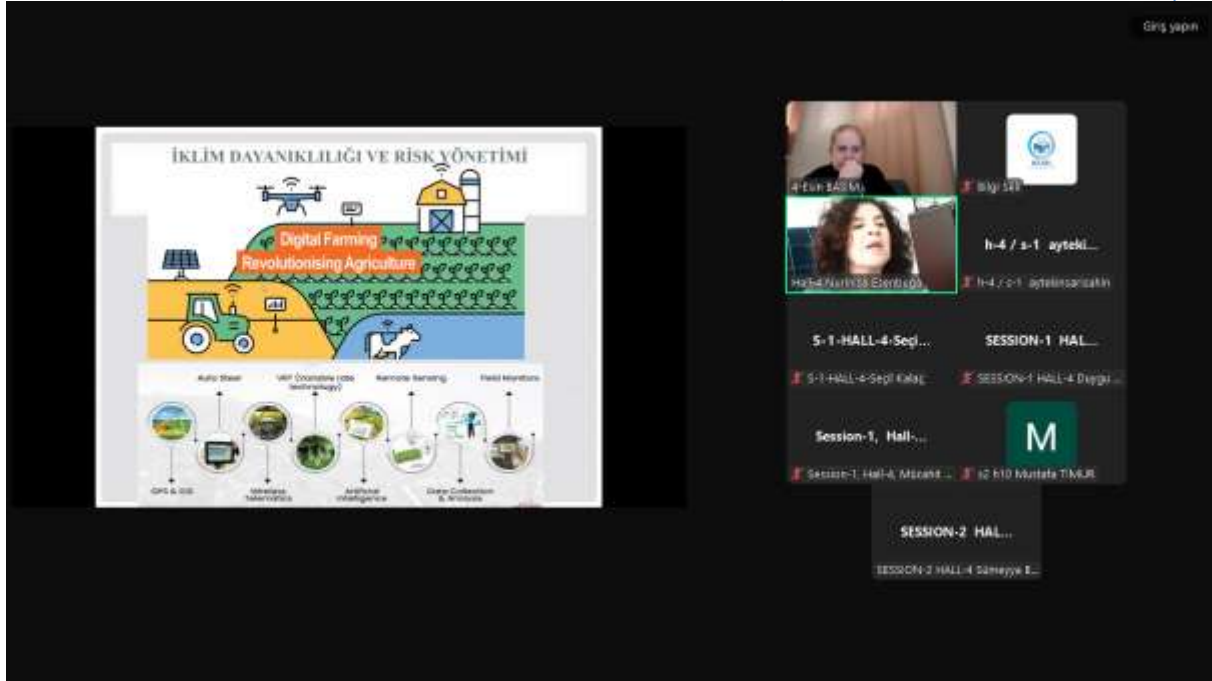
Kayıt

Ab yapma özelliği

Daha fazla

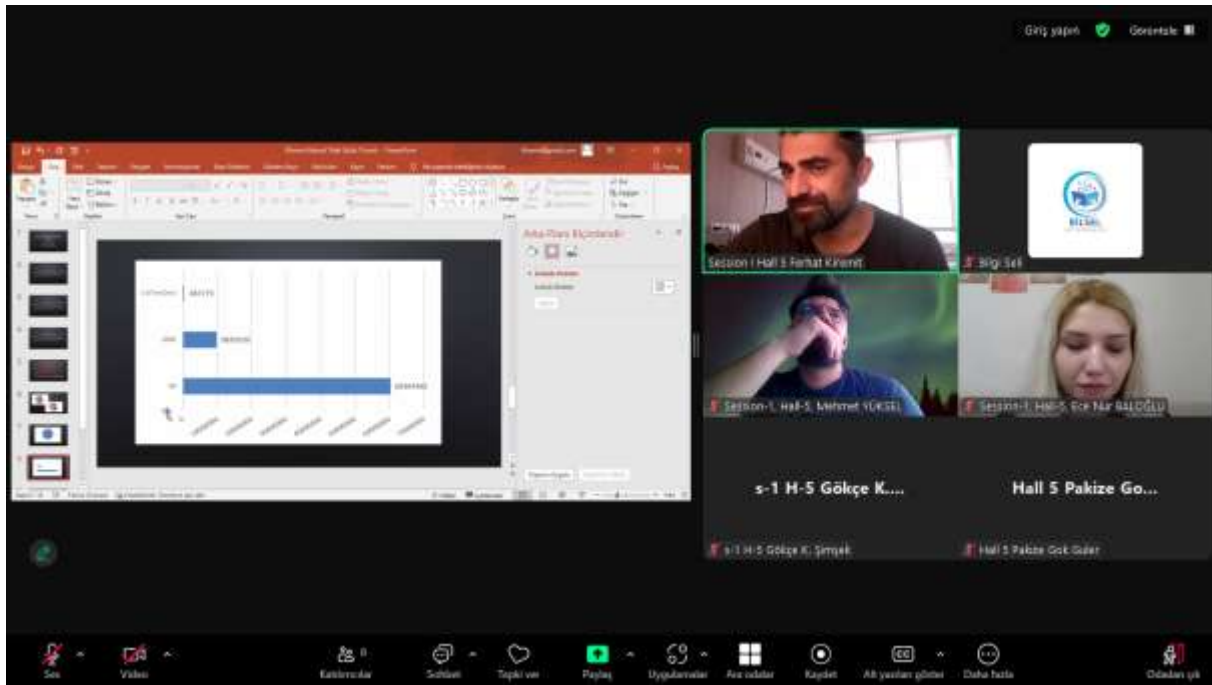
Özellikler





The screenshot shows a Zoom meeting interface. On the left, a presentation slide titled "İKLİM DAYANIKLILIĞI VE RİSK YÖNETİMİ" (Climate Resilience and Risk Management) is displayed. The slide features a central illustration of a farm with a tractor, a cow, and a barn, with the text "Digital Farming" and "Revolutionising Agriculture". Below the illustration is a flowchart showing the integration of various technologies: "Auto Steer", "VAD (Variable Rate Technology)", "Precision Farming", and "Field Monitoring". The flowchart also includes icons for "GPS & GIS", "Remote Sensing", "Artificial Intelligence", and "Data Collection & Analysis".

On the right, the Zoom gallery view shows several participants. The top row includes a participant named "4-Fatih İLİM" and a participant named "H4-4-Meryem Ezerlioğlu". Below them are several session titles, including "5-1-HALL-4-Seq...", "SESSION-1 HALL...", "SESSION-1 HALL-4 Deygi...", "Session-1, Hall-...", and "SESSION-2 HAL...". A large green letter "M" is visible in the bottom right corner of the gallery view.



The screenshot shows a Zoom meeting interface. On the left, a presentation slide is displayed, showing a bar chart with two bars. The first bar is labeled "10000" and the second bar is labeled "20000". The chart is titled "Yatırım" (Investment) and "Giriş" (Revenue). The slide also shows a table with columns for "Yatırım" and "Giriş".

On the right, the Zoom gallery view shows several participants. The top row includes a participant named "Session 1 Hall 5 Fatmat K Ferit" and a participant named "Siyg 348". Below them are several session titles, including "Session-1, Hall-5, Mehmet YÜKSEL", "Session-1, Hall-5, Ece TAY BALIĞLU", "s-1 H-5 Gökçe K....", and "Hall 5 Pakize Go...".

At the bottom of the screen, the Zoom control bar is visible, showing icons for "Ses" (Audio), "Video", "Etkileşimler" (Interactions), "Sohbet" (Chat), "Takip et" (Follow), "Paylaş" (Share), "Uygulamalar" (Apps), "Araçlar" (Tools), "Kaydet" (Record), "Açık yapma/gizleme" (Open/Close), "Diğerler" (Others), and "Odağın gücü" (Focus strength).

**6. BİLSEL  
ULUSLARARABI BİLİMSEL  
ARASTIRMA KONGRESİ  
KASIM AYI**

**EKSTREM ORTAMLARDA YAŞAYAN  
BAKTERİLERİN PİGMENTLERİ  
VE  
KULLANIM POTANSİYELLERİ**

Dr. Öğr. Üyesi Dr. Öğr. Üyesi  
Kocaeli Üniversitesi, Sağlık Bilimleri Fakültesi, Mikrobiyoloji Anabilim Dalı  
Dr. Öğr. Üyesi Dr. Öğr. Üyesi  
Kocaeli Üniversitesi, Sağlık Bilimleri Fakültesi, Mikrobiyoloji Anabilim Dalı

Not alınması için tıklayın

Zoom meeting interface showing participants: Emine Halkın, Biçli Sel, Mustafa Korkaya, S1 H6 Emine KÜ..., S1 H6 Emine KUÇUKER, Session-1 Hall-6..., Session-1 Hall-6..., Session-1 Hall-6 Ayazra Maryem ASLA..., Session-1 Hall-6 Deniz Nazlı Güler.

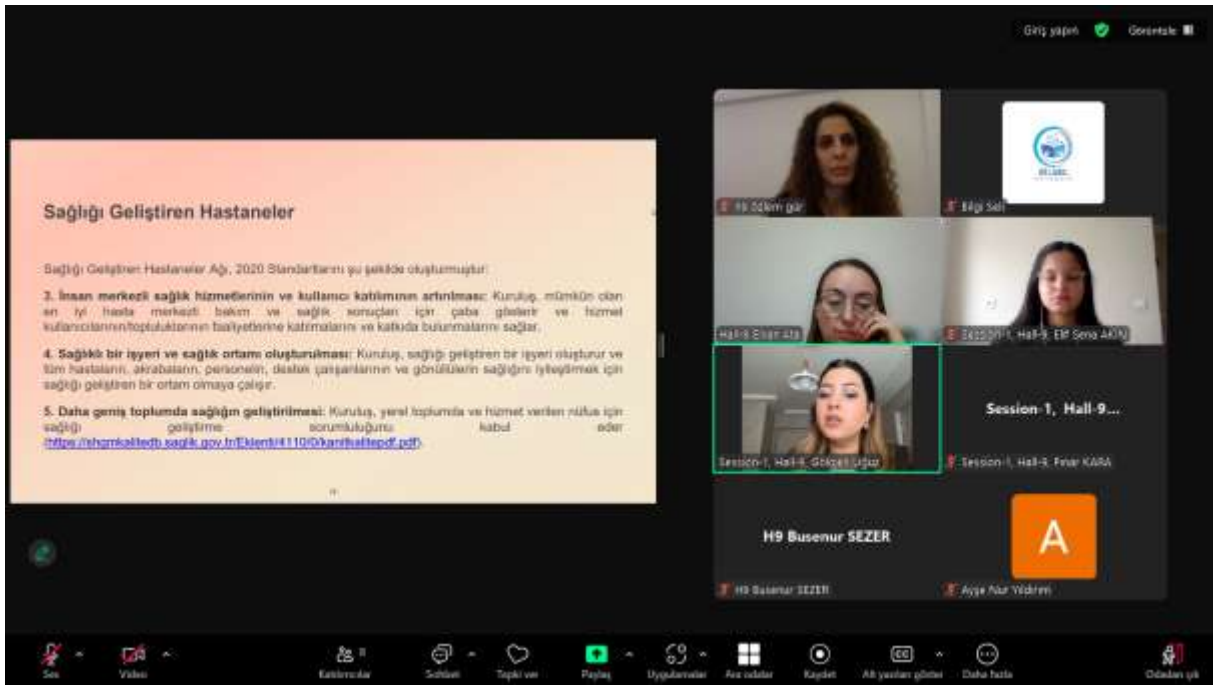
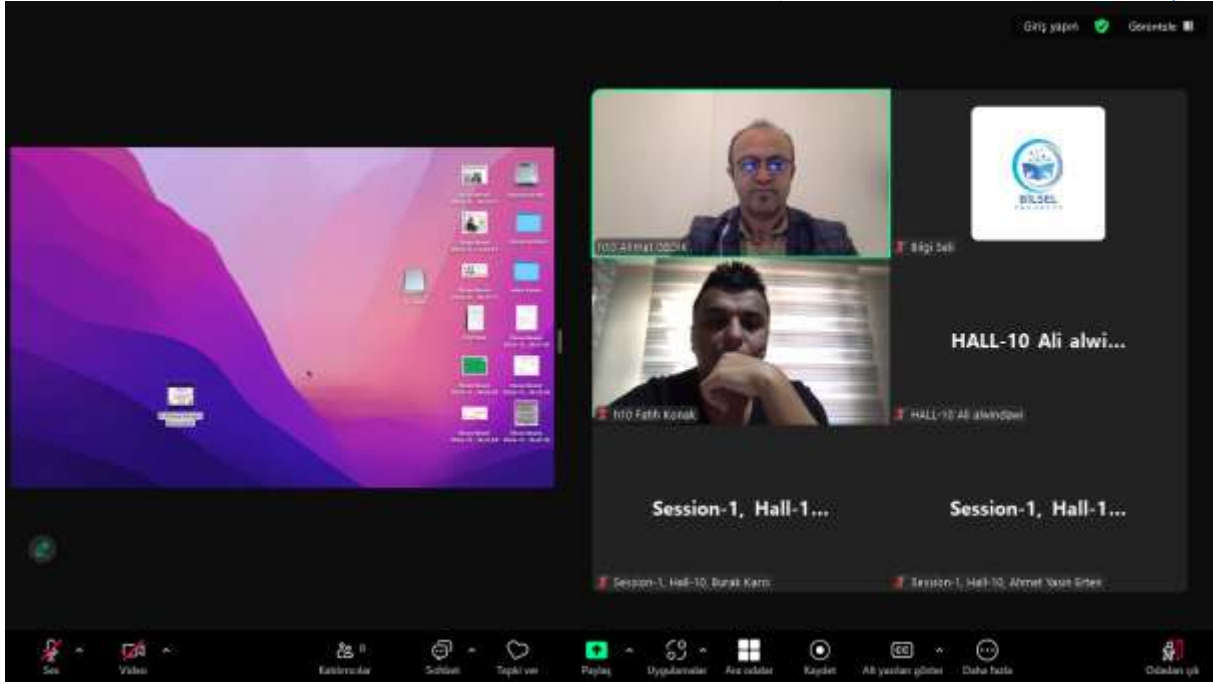
**BULGULAR**

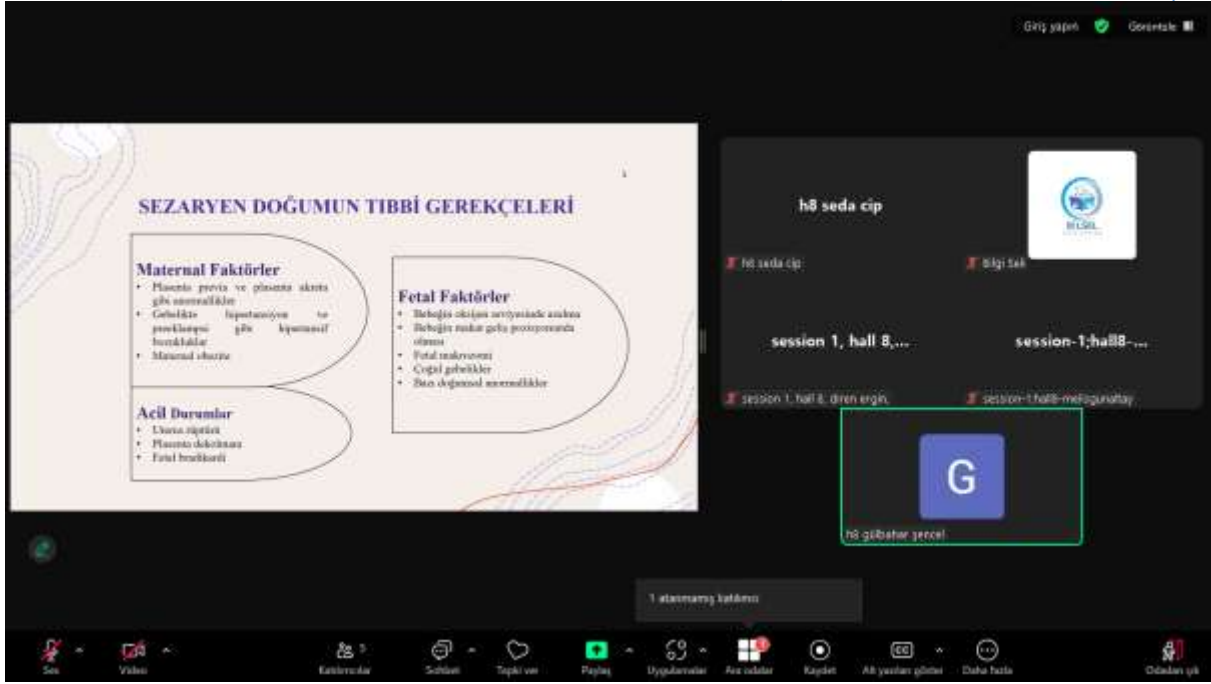
Parameter	Mean ± SD'n (min-max)
Age (years)	42.18±18.37 (30-65)
Disease Duration	12.09±7.43
Gender (F/M)	21/19
BMI	27.20±4.08 (21.14-33.24)
VAS	2.24±1.27
UFAA	228.67±144.38 MEU-min/week

16/18 ilaç egzersiz yapmıyor  
14/18 ara sıra egzersiz yapıyor  
5/18 düzenli egzersiz yapmıyor

↓  
DÜŞÜK FİZİKSEL AKTİVİTE

Zoom meeting interface showing participants: Ayşe Karadağ, Biçli Sel, Emine Dilek Karbalıoğlu, Emine Çetin, Session-1 Hall-7 Özgürer Gezgül.





**SEZARYEN DOĞUMUN TIBBİ GEREKÇELERİ**

**Maternal Faktörler**

- Plazenta previa ve plasenta aksata gibi anomaliler
- Gebelikte hipertansiyon ve pre-eklampsi belirtilerleri
- Maternal obezite

**Acil Durumlar**

- Uterin perforasyon
- Plazenta abluksiyonu
- Fetal baskınlığı

**Fetal Faktörler**

- Bebeğin oksijen seviyesinde anormali
- Bebeğin matris gelyi pozisyonunda olması
- Fetal anormali
- Çeşitli gebelikler
- Bazen doğumsal anomaliler

h8 seda cip

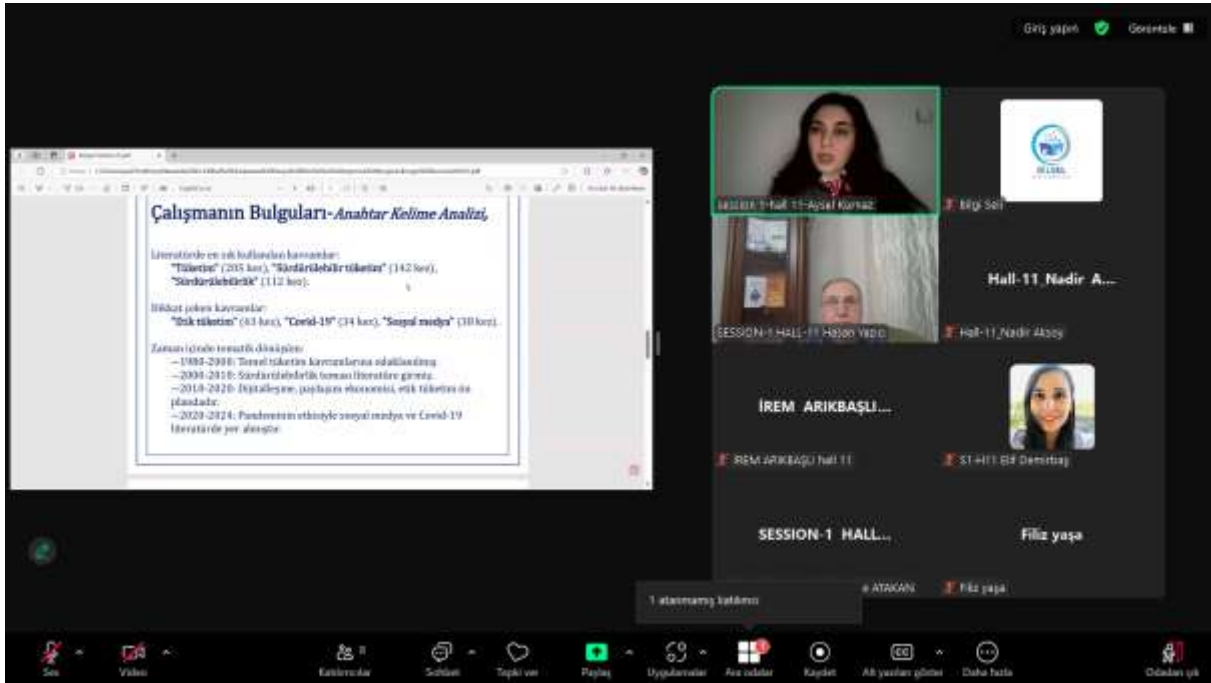
h8 seda cip

session 1, hall 8,...

session-1,hall8-...

h8 gübatar yercel

1 atamamıy katılmı



**Çalışmanın Bulguları-Anahtar Kelime Analizi**

Literatürde en sık kullanılan kavramlar:  
"Tükürük" (205 kez), "Kardiyalektomi" (142 kez),  
"Sindirim sistemi" (112 kez).

Bilgiyi içeren kavramlar:  
"Dokümantasyon" (83 kez), "Covid-19" (34 kez), "Sıgırcılık" (30 kez).

Zaman (yazılı) ile ilgili kavramlar:  
— 2000-2010: Tükürük salgısı kavramlarına odaklanılmıştır.  
— 2010-2015: Sindirim sistemi ile ilgili kavramlara odaklanılmıştır.  
— 2015-2020: Diyet, yaşam tarzı, sağlık ekonomisi, etik kavramlar da planlanmıştır.  
— 2020-2024: Pandemi süreciyle ilgili kavramlar ve Covid-19 literatüründe yer almıştır.

İREM ARIKBAŞLI...

İREM ARIKBAŞLI hall 11

SESSION 1 HALL...

Hall-11, Nadir A...

Hall-11, Nadir A...

Filiz yaşa

1 atamamıy katılmı

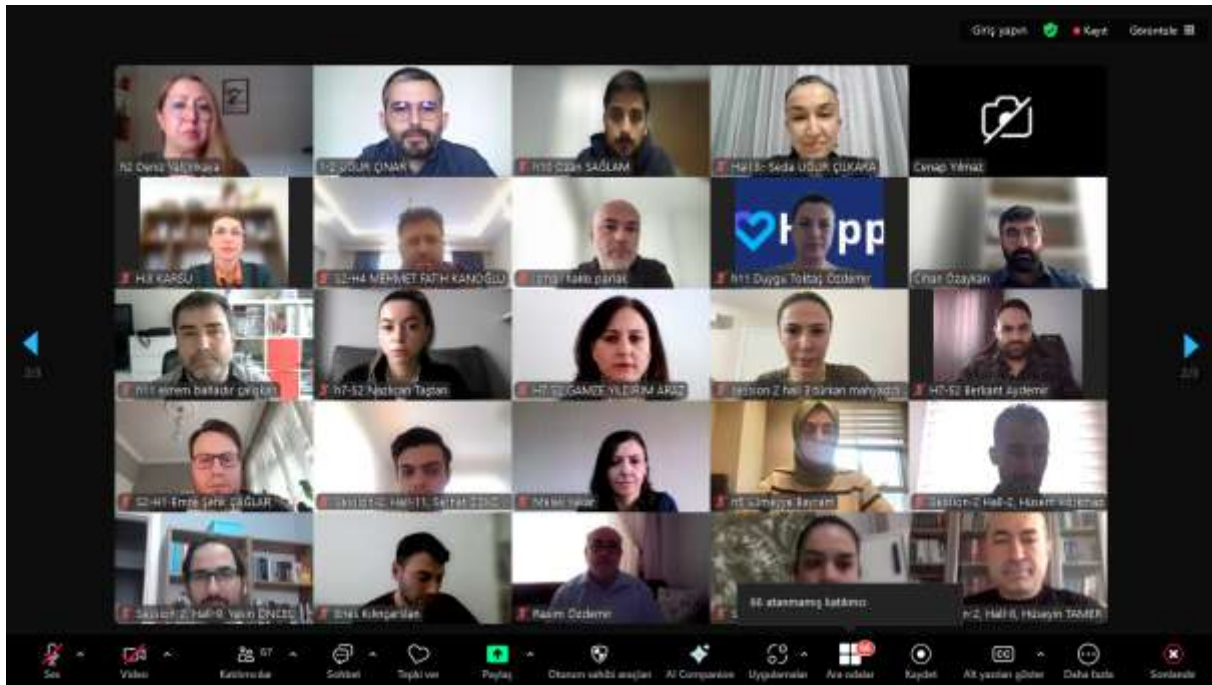
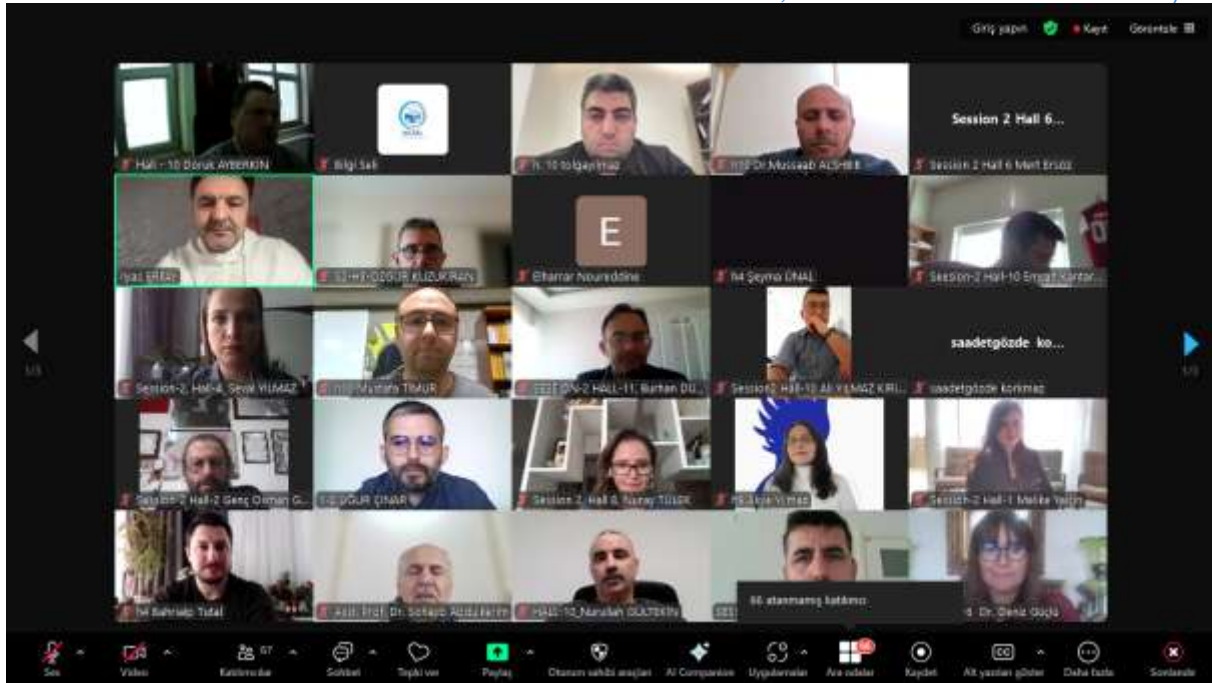
ATAKAN

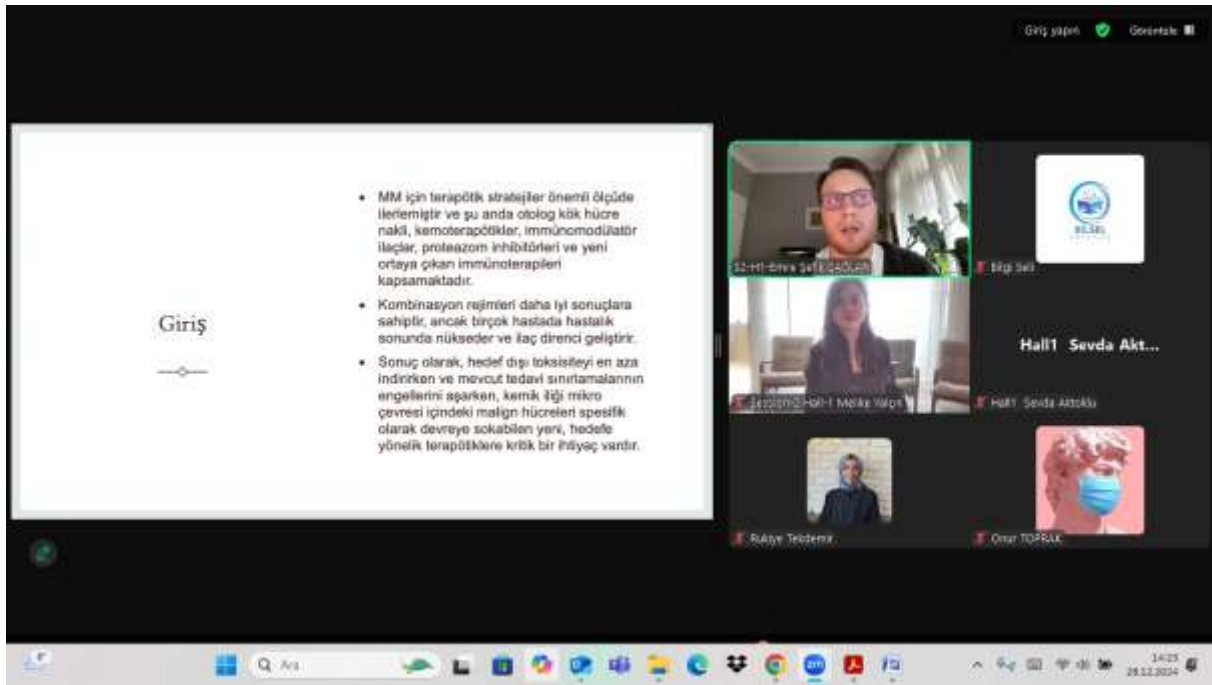
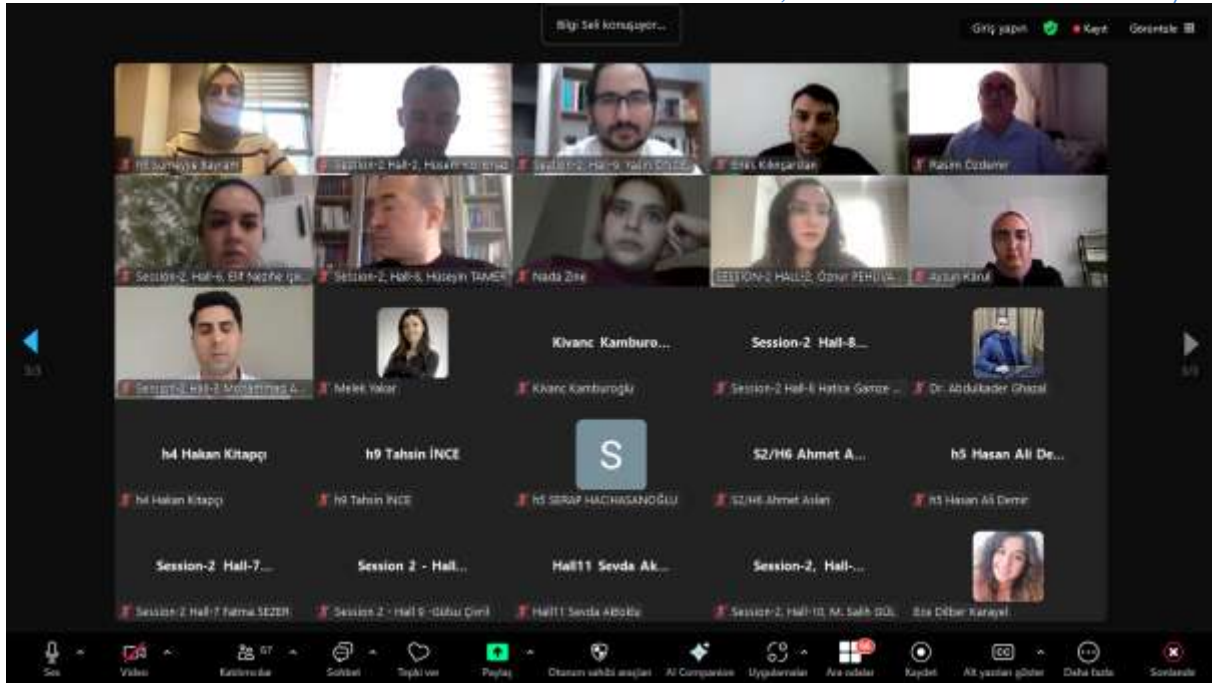
Filiz yaşa



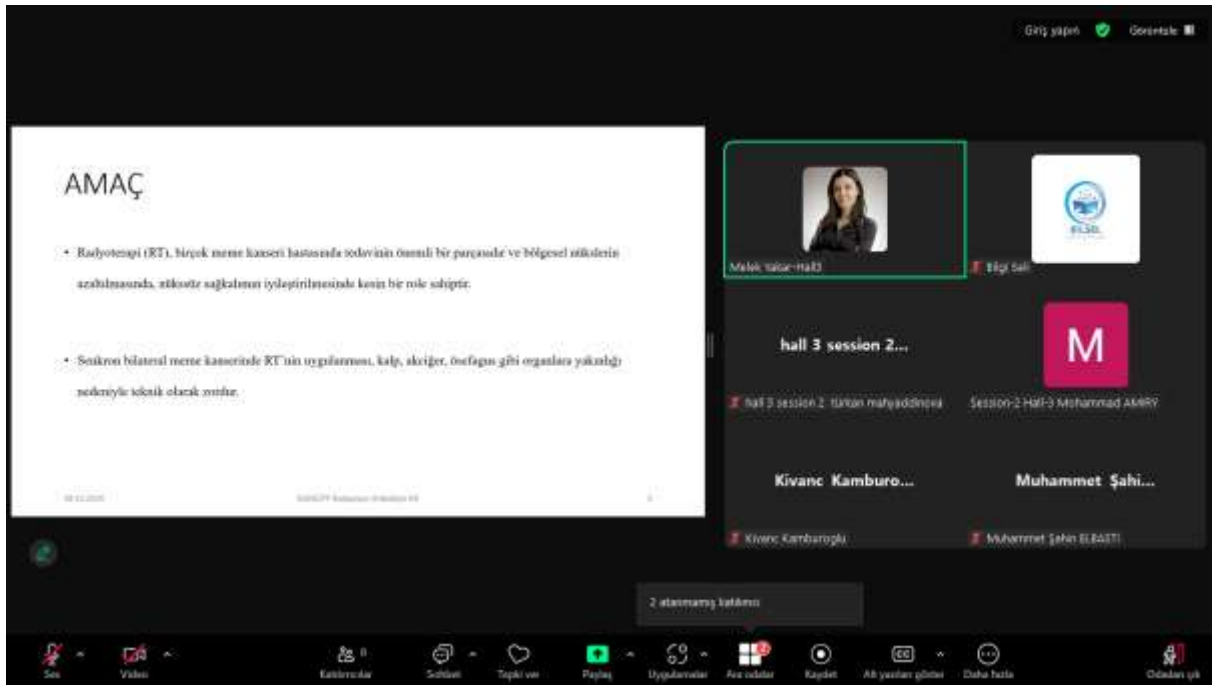
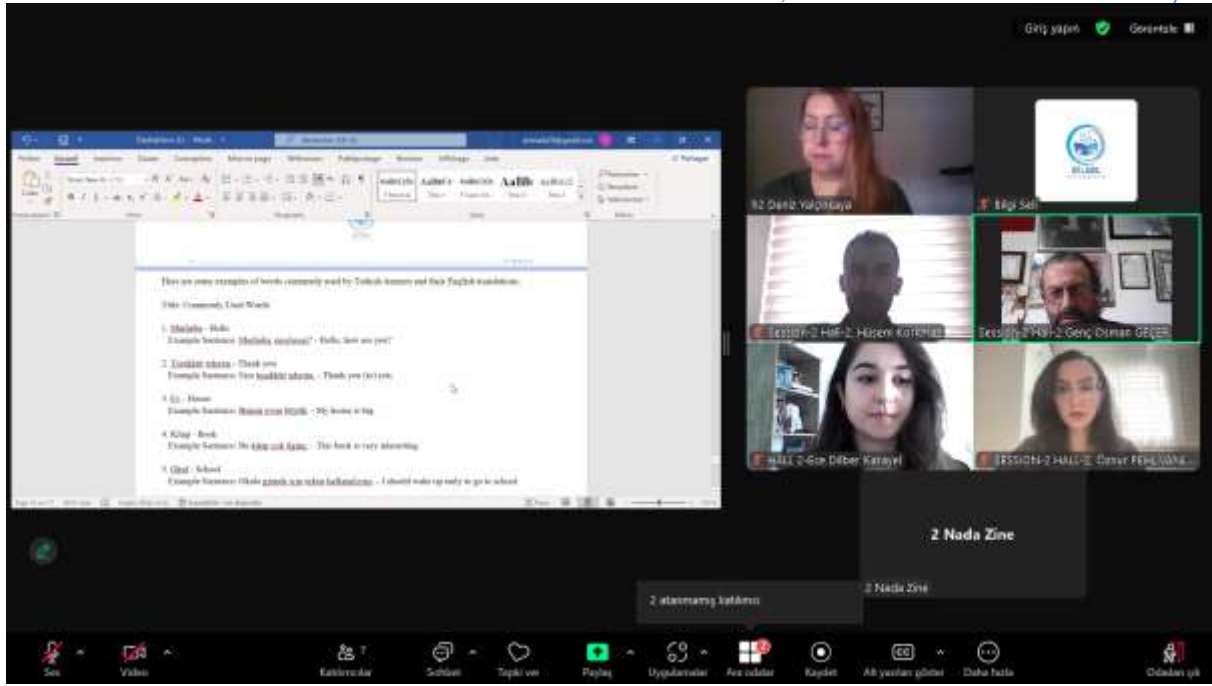


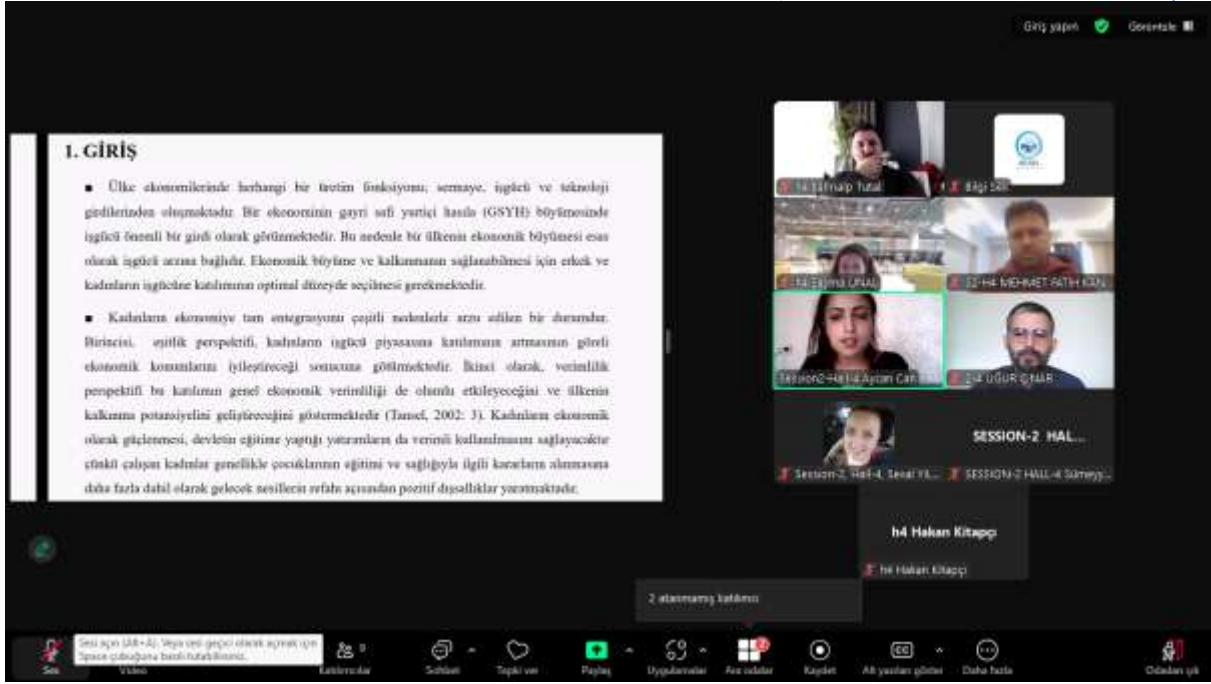
6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE









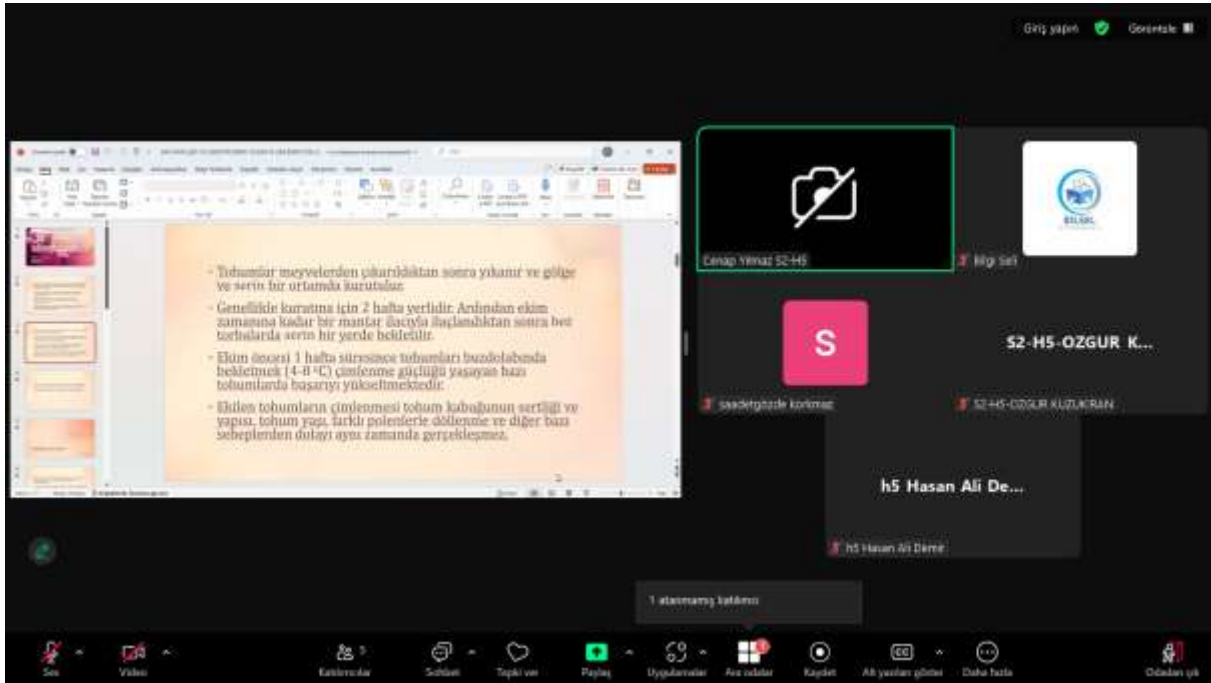


**1. GİRİŞ**

- Ülke ekonomilerinde herhangi bir üretim fonksiyonu, sermaye, işgücü ve teknoloji girişlerinden oluşmaktadır. Bir ekonominin gayri safi yurtici hasıla (GSYİH) büyümesinde işgücü önemli bir girdi olarak görülmektedir. Bu sebele bir ülkenin ekonomik büyümesi esas olarak işgücü artması bağlıdır. Ekonomik büyüme ve kalkınmanın sağlanabilmesi için erkek ve kadınların işgücüne katılımının optimal düzeyde seçilmesi gerekmektedir.
- Kadınların ekonomiyi tam entegrasyonu çeşitli noktalarda arzı edilen bir durumdur. Birincisi, eşitlik perspektifi, kadınların işgücü piyasasına katılımının artmasının global ekonomik konularını iyileştireceği sonucuna görülmektedir. İkinci olarak, verimlilik perspektifi bu katılımın genel ekonomik verimliliği de olumlu etkileyeceğini ve ülkenin kalkınma potansiyelini geliştireceğini göstermektedir (Tansel, 2002: 3). Kadınların ekonomik olarak güçlenmesi, devletin eğitimine yaptığı yatırımları da verimli kullanımını sağlayacaktır. Etkin çalışan kadınlar genellikle çocuklarının eğitimi ve sağlığıyla ilgili kararlarda alınması daha fazla dikkatli olarak gelecek nesillerin refahı açısından pozitif dışsallıklar yaratmaktadır.

2 atamamış katılımcı

h4 Hakan Kitapçı  
h4 Hakan Kitapçı



- Tohumlar meyvelerden çıkarıldıktan sonra yıkanır ve güneş ve serin bir ortamda kurutulur.

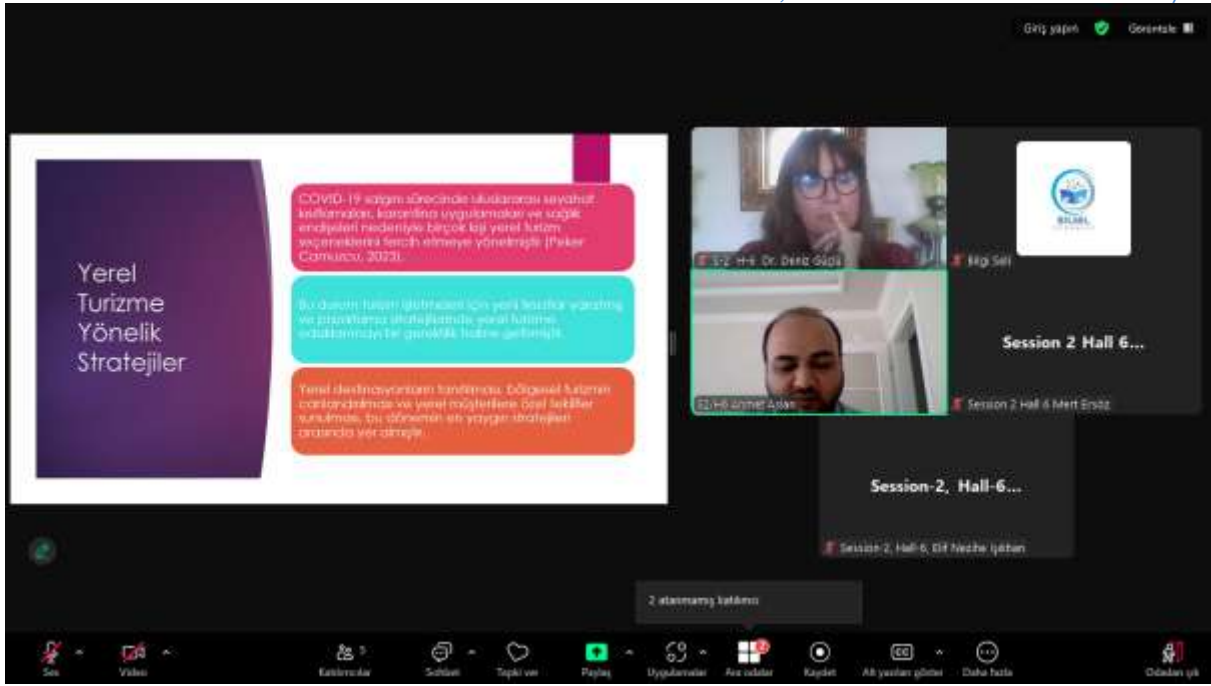
- Genellikle kurutma için 2 hafta yerlidir. Ardından ekim zamanına kadar bir mantar ürcüyle ilaçlandıktan sonra bu tohumlarda serin bir yerde bekletilir.

- Ekim öncesi 1 hafta süresince tohumları buzdolabında bekletmek (4-8 °C) çimlenme gücünü yaşayan bazı tohumlarda başarıyı yükseltmektedir.

- Ekilen tohumların çimlenmesi tohum kabuğunun sertliği ve yapısı, tohum yağı, tıkrıklı polimerlerle okülleme ve diğer bazı sebeplerden dolayı aynı zamanda gerçekleşmez.

1 atamamış katılımcı

h5 Hasan Ali De...



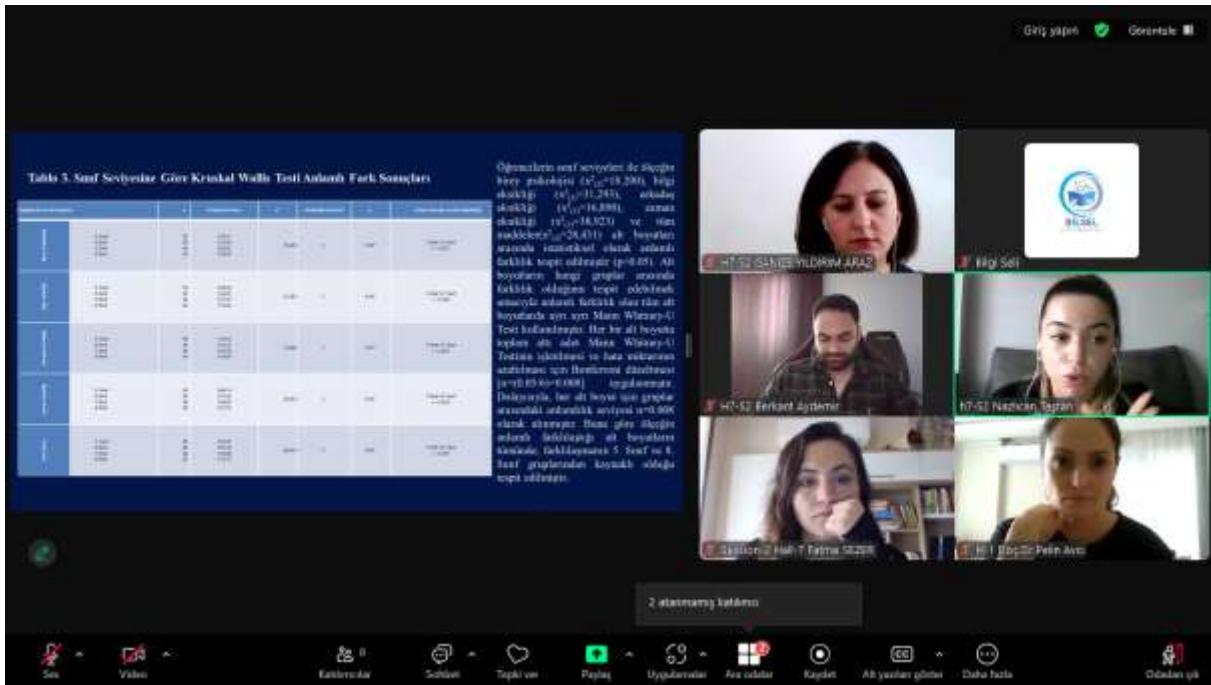
**Yerel Turizm Yönelik Stratejiler**

COVID-19 salgını sürecinde turistlerin kaybolmuş kilitlenmiş, kısıtlanıp uygulamaları ve sosyal etkilerini nedeniyle büyük ölçüde yerel turizm sektörüne yönelik stratejiyi (Peker Cumhuriyet, 2023).

İki hafta önce gerçekleştirilen yerel turizm yarışması ve strateji yarışması ile yerel turizm sektörüne yönelik stratejiyi geliştiren ve uygulamaya geçiren yerel yönetimler.

Yerel destinasyonların turizmci, dijitalleşen pazarlar ve yerel yönetimlere özel faaliyet sunmaları, bu dönemdeki yerel stratejiyi oluşturdu ve etkiledi.

2 atamamış katılımcı



**Tablo 5. Saflık Seviyesi Göre Krizsel Wallis Testi Anlamlı Farklı Sonuçları**

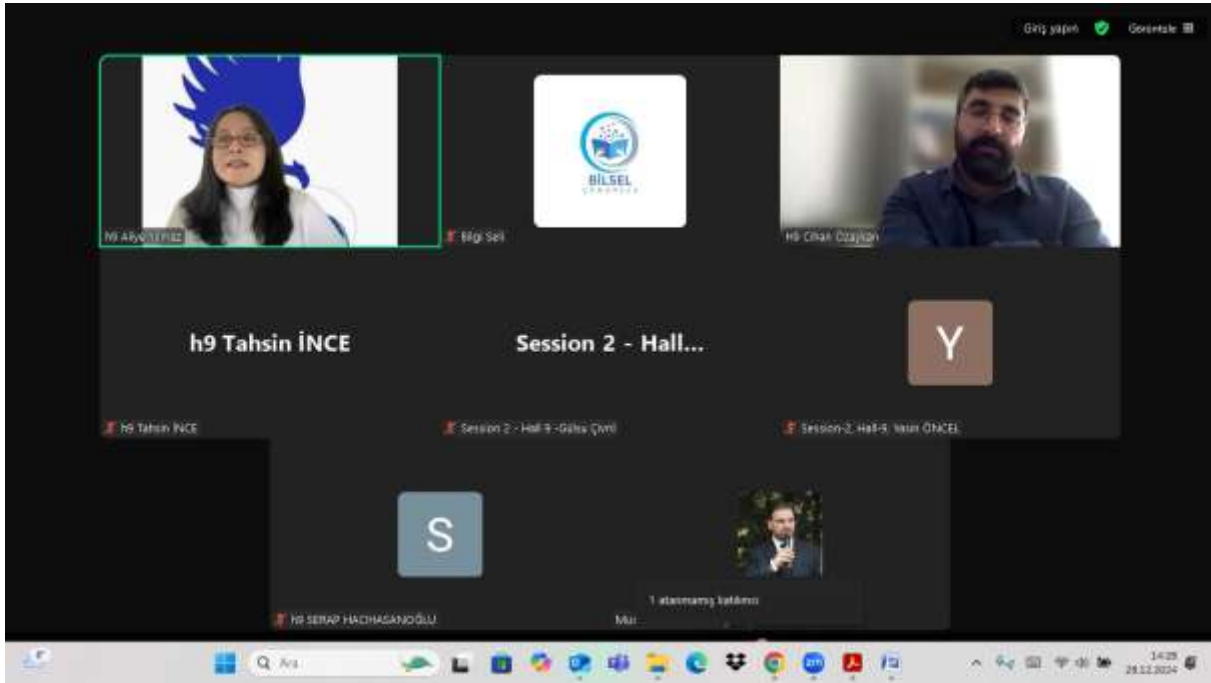
Grup	Ortalama	Standart Sapma	Minimum	Maximum	Statistiksel Anlamlılık
1	10.5	1.2	8.5	12.5	0.001
2	11.2	1.5	9.2	13.2	0.002
3	12.0	1.8	10.0	14.0	0.003
4	13.5	2.0	11.5	15.5	0.004
5	14.2	2.2	12.2	16.2	0.005

Öğrencilerin son seviyelerde olduğu birer grubu (N=100), birer grubu (N=100), birer grubu (N=100), birer grubu (N=100) ve birer grubu (N=100) ile birer grubu (N=100) arasında gerçekleştirilen Wallis testi sonuçları farklılık tespit edilmiştir (p<0.05). Alt boyutları, birer grubu arasında farklılık olduğu tespit edilmiştir. Ayrıca, birer grubu (N=100) ile birer grubu (N=100) arasında gerçekleştirilen Wallis testi sonuçları farklılık tespit edilmiştir (p<0.05). Ayrıca, birer grubu (N=100) ile birer grubu (N=100) arasında gerçekleştirilen Wallis testi sonuçları farklılık tespit edilmiştir (p<0.05).

2 atamamış katılımcı



6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE







Giriş yapın

## Kamu Yararı Kavramı

- **Özellikler:**
- Hukuki ve anayasal dayanağa sahip
- Toplumsal faydaya vurgu yapan
- Ekonomik olarak karşılığı ortaya koyulamayan
- Kamu gücünün meşruiyet dayanağı
- Kamusal politikaların temeli
- Dinamik ve göreceli bir kavram...



Giriş yapın Gözetle



Ses Video Etkileşim Süzgeç Toplu ses Paylaş Uygulamalar Araçlar Kaydet Alt yazılar çözümler Daha fazla Odağın çö



Session-1 Hall-3, Sabri Elz ZEYNEK beklemeye odasına girin [Ana Otusuna Kabul Et](#) Görüntüle x Giriş yapın Gözetile

### SONUÇLAR

İyileşimin çevre yüklenimlerinin dışıdan kanser tedvi sürecindeki olumlu etkilerini araştırmak için:

- Meklenkonda gıda ıspı kullanımını maksimum düzeyde tutmak için gerekli yastelenme, analize ve nazama ile ilııkendirmenin,
- Şifa bahçeleri, iç bahçeler ve peyzaj dızenlemelerinin tasarruflar noktasında dızenlenmesinin,
- Doğal seslerin özellikle iç meknlarda da kullanılması potansiyeli seroona dızenlenmiştir.

İyileşimin çevre yüklenimlerinin dışıdan kanser tedvi sürecindeki olumlu etkilerini araştırmak için:

İyileşimin çevre yüklenimlerinin dışıdan kanser tedvi sürecindeki olumlu etkilerini araştırmak için:

Table 3. Özel yetenekli öğrencilerin ünsiyetine göre edıtırdukları metaförler.

Kategoriler	Kadın	Erkek
Farklı Bir	7	10
İyi Bir	8	8
Beyhuzama	10	3
Duyun Bir		
Yetersiz Bir	4	4
Nadir Bir	3	3
Herkes Gibi	3	3
Güçlü Bir	1	4
Diğer	1	2
Toplam	37	37

Tablo 1. Araştırma Katılımlarının Demografik Bilgileri (N:14)			
Özellik	Kategori	f	%
Cinsiyet	Erkek	11	78,6
	Bizak	2	14,3
	Başka	1	7,1
	Diğer	0	0,0
Eğitim Durumu	Yüksek Lisans	3	21,4
	Üniversite	10	71,4
	Ortaokul	1	7,1
	Diğer	0	0,0
Yaş	0-9 yaş	0	0,0
	10-19 yaş	1	7,1
	20-29 yaş	7	50,0
	30 yaş ve üzeri	6	42,9
Okulda Okuduğu Sınıf	1.sınıf	10	71,4
	2.sınıf	2	14,3
	Diğer	2	14,3
En Çok Okuduğu Ders	Matematik	14	100,0
	Diğer	0	0,0
	Diğer	0	0,0

VI. BİLSEL ULUSLARARASI DÜNYA BİLİM VE ARAŞTIRMA KONGRESİ

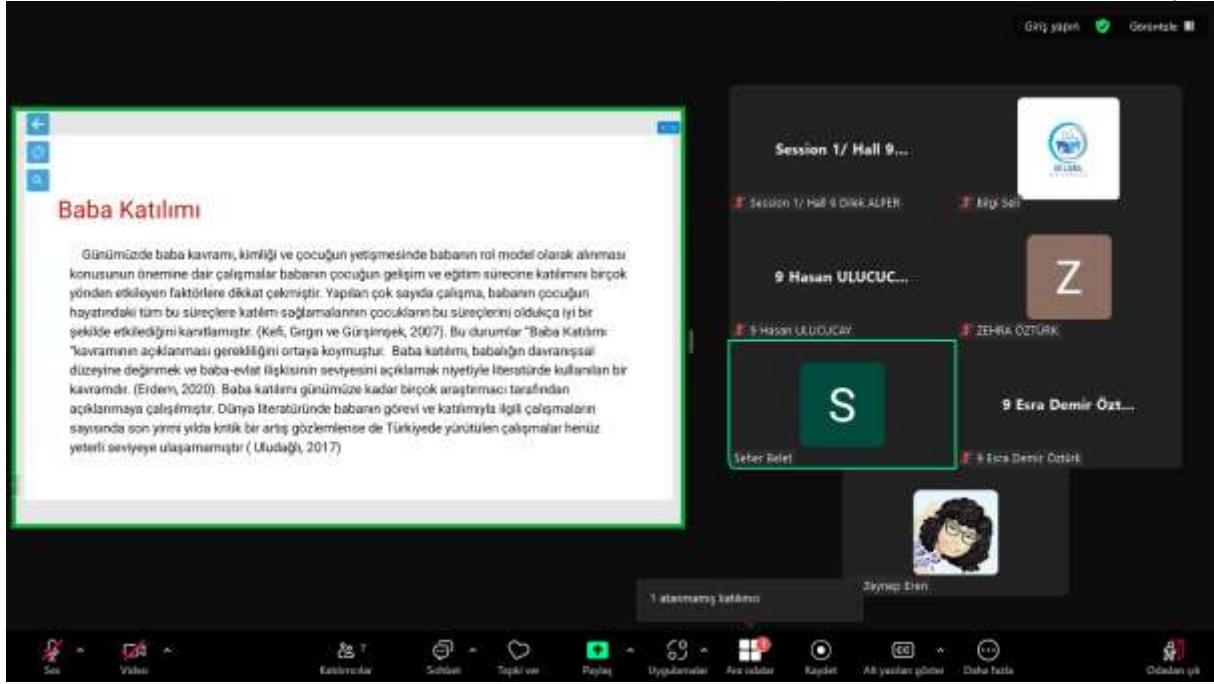
1996-2024 Olimpiyat Oyunları Bisiklet (Zamana Karşı) Branşında Yarışan Erkek Sporcularının Antropometrik Özelliklerinin İncelenmesi

Ali Akdoğan, Mustafa Kemal, Ali Akdoğan

Ali Akdoğan, Mustafa Kemal, Ali Akdoğan

Ali Akdoğan, Mustafa Kemal, Ali Akdoğan



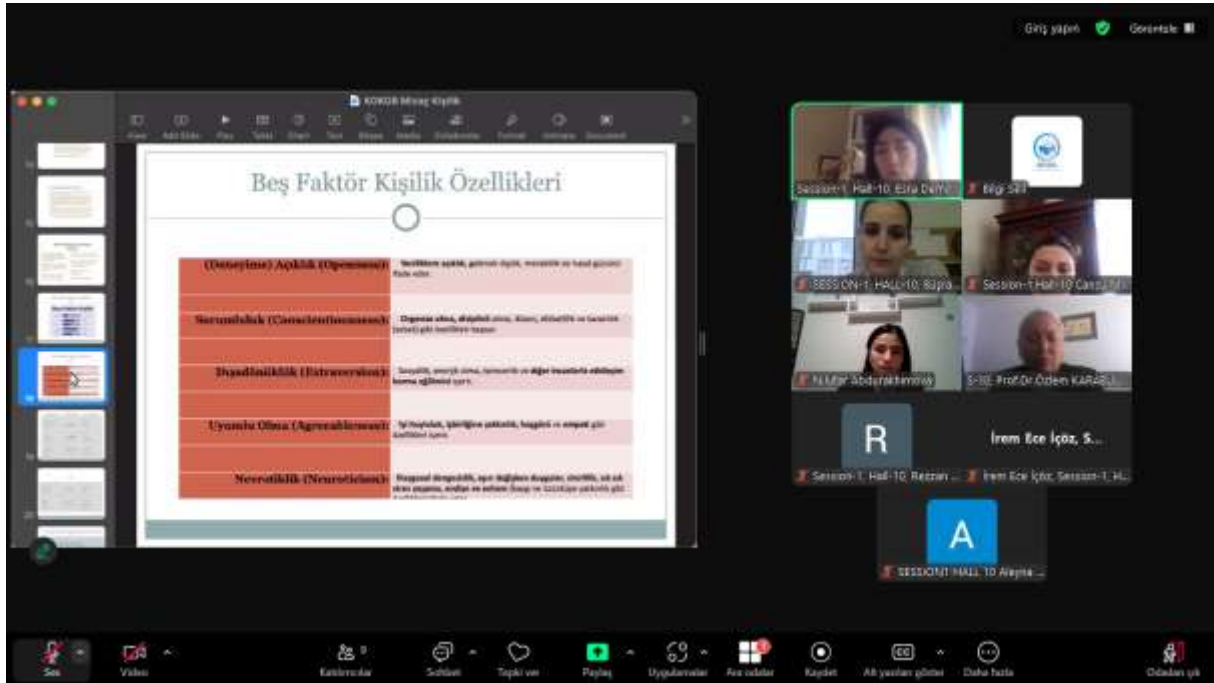


**Baba Katılımı**

Günümüzde baba kavramı, kimliği ve çocuğun yetişmesinde babanın rol modeli olarak alınması konusunun önemine dair çalışmalar babanın çocuğun gelişim ve eğitim sürecine katılımını birçok yönden etkileyen faktörlere dikkat çekmiştir. Yapılan çok sayıda çalışma, babanın çocuğun hayatındaki tüm bu süreçlere katılmı sağlamlanması çocukların bu süreçlerini oldukça iyi bir şekilde etkilediğini kanıtlamıştır. (Keleş, Grgın ve Günşirnek, 2007). Bu durumlar "Baba Katılımı" kavramının açıklanması gerekliliğini ortaya koymuştur. Baba katılımı, babaların davranışsal düzeyine değirmek ve baba-evlad ilişkisinin seviyesini açıklamak niyetiyle literatürde kullanılan bir kavramdır. (Erdem, 2020). Baba katılımı günümüze kadar birçok araştırmacı tarafından açıklanmaya çalışılmıştır. Dünya literatüründe babanın görevi ve katılımıyla ilgili çalışmaların sayısında son yirmi yılda kritik bir artış gözlemlense de Türkiye'de yürütülen çalışmalar henüz yeterli seviyeye ulaşamamıştır ( Uludağ, 2017)

1 atamamış katılımcı

Zeynep Eren

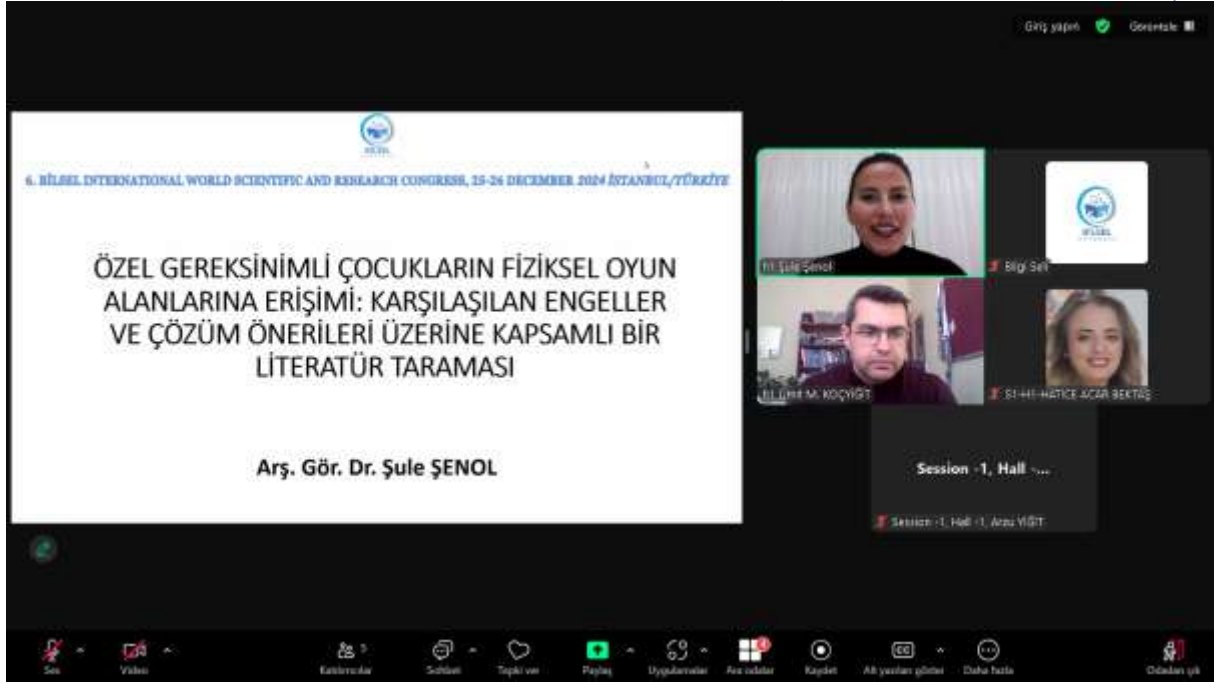


**Beş Faktör Kişilik Özellikleri**

<b>(Duygulanı) Açıklık (Openness)</b>	Yükseklik açıklık, genetik açıdan, genellikle en fazla genetik faktör olanıdır.
<b>Neurotizizm (Neuroticism)</b>	Duygulanı, duygusal durum, kaygı, stresli ve kaygıdan dolayı gibi belirtilerle tanımlanır.
<b>İstidatlılık (Extraversion)</b>	Sevme, enerji, sosyal, hareketli ve diğer insanların etkilenmesiyle kendini ifade eder.
<b>Uyumlu Olma (Agreeableness)</b>	İyi huyluluk, işbirliğine açıklık, hoşgörü ve empati gibi özelliklerdir.
<b>Neurotizizm (Neuroticism)</b>	Projelemlenmiş, sıkı, duygulanı, kaygı, stresli, sık sık kaygı, kaygı, kaygı ve kaygı ile ilgili özelliklerdir.

İrem Ece İzoç, S...





The screenshot shows a Zoom meeting interface. The main window displays a presentation slide with the following text:

6. BİLSEL INTERNATIONAL WORLD SCIENTIFIC AND RESEARCH CONGRESS, 28-29 DECEMBER 2024 İSTANBUL/TÜRKİYE

ÖZEL GEREKSİNİMLİ ÇOCUKLARIN FİZİKSEL OYUN ALANLARINA ERİŞİMİ: KARŞILAŞILAN ENGELLER VE ÇÖZÜM ÖNERİLERİ ÜZERİNE KAPSAMLI BİR LİTERATÜR TARAMASI

Arş. Gör. Dr. Şule ŞENOL

The right side of the screen shows a grid of participants:

- Top left: H1-Şule Şenol
- Top right: Bigi Sel
- Bottom left: ELLERİ M. KOÇYİĞİT
- Bottom right: S1-H1-HATİCE AÇAR BEKTAŞ

At the bottom, there is a control bar with icons for Mute, Video, Participants, Chat, Reactions, Share, Appointments, Remote Control, Record, All features off, and More options. A session name "Session -1, Hall ..." is visible at the bottom right.



The screenshot shows a Zoom meeting interface. The main window displays a presentation slide with the following text:

EKONOMİK KRİZ TÜRLERİ?

The slide contains a flowchart titled "EKONOMİK KRİZ TÜRLERİ?". The chart is structured as follows:

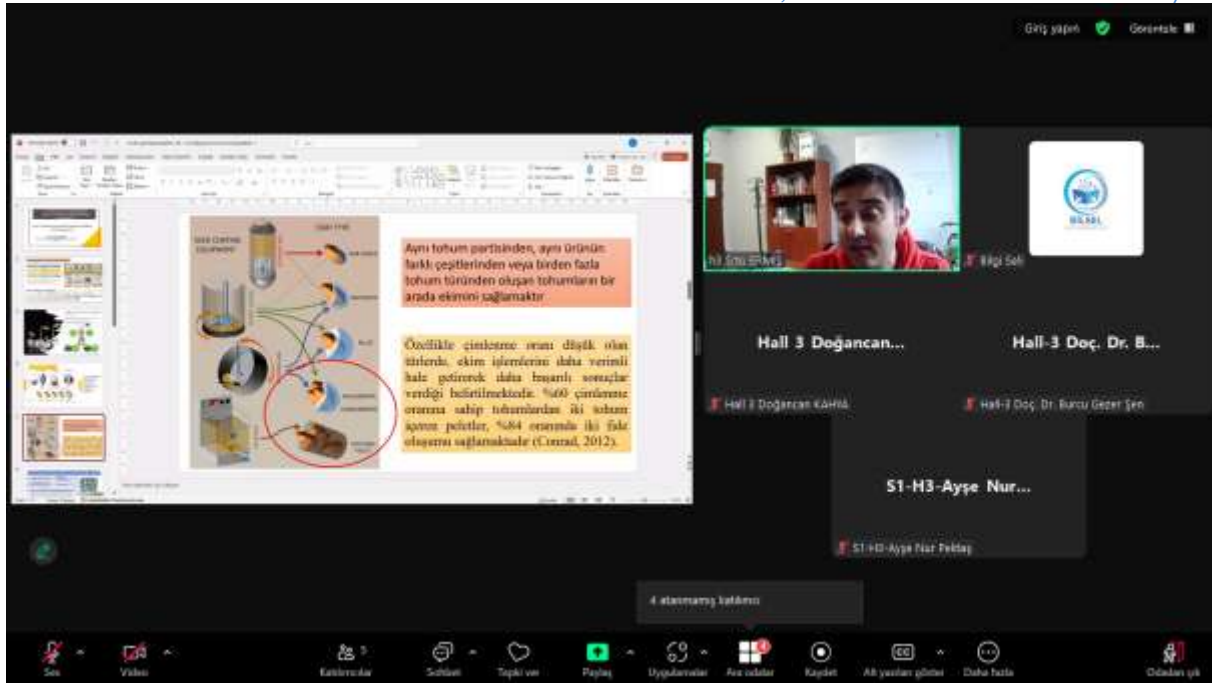
- Root: EKONOMİK KRİZLER
- Level 1: İŞLETİM KRİZLERİ, FİNANSLAL KRİZLER
- Level 2 (under İŞLETİM KRİZLERİ): İşletim Krizi, İnovasyon Krizi, İşletim Krizi
- Level 2 (under FİNANSLAL KRİZLER): Finansal Kriz, Dış Borç Krizi, Sıvılaşma Krizi, Likidite Krizi, Piyasa Krizi
- Level 3 (under İşletim Krizi): İşletim Krizi
- Level 3 (under Dış Borç Krizi): Dış Borç Krizi
- Level 3 (under Sıvılaşma Krizi): Sıvılaşma Krizi
- Level 3 (under Likidite Krizi): Likidite Krizi
- Level 3 (under Piyasa Krizi): Piyasa Krizi
- Level 3 (under İşletim Krizi): İşletim Krizi
- Level 3 (under Dış Borç Krizi): Dış Borç Krizi
- Level 3 (under Sıvılaşma Krizi): Sıvılaşma Krizi
- Level 3 (under Likidite Krizi): Likidite Krizi
- Level 3 (under Piyasa Krizi): Piyasa Krizi

The right side of the screen shows a grid of participants:

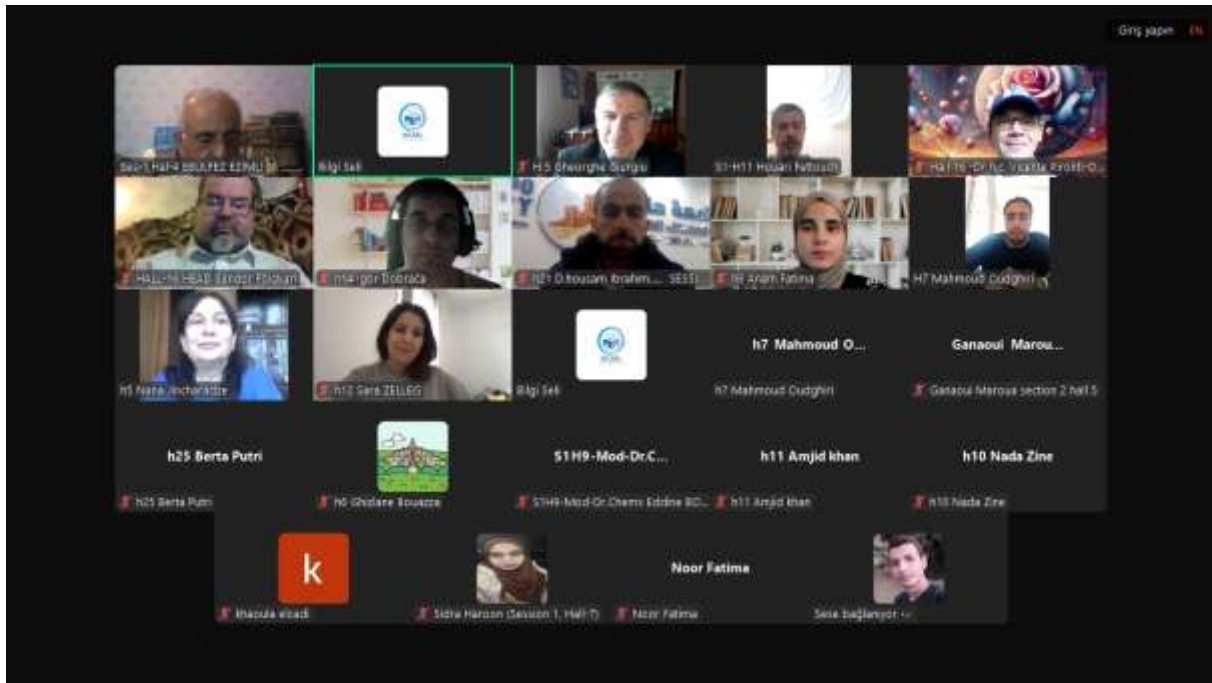
- Top left: H1-H2-Dr. Ferit LİTİNE
- Top right: Bigi Sel
- Bottom left: S1-H2-Serap SA...
- Bottom right: S1-H2-Serap SARBAĞ

At the bottom, there is a control bar with icons for Mute, Video, Participants, Chat, Reactions, Share, Appointments, Remote Control, Record, All features off, and More options. A session name "4. atömyeriyi katılmı" is visible at the bottom right.





The screenshot shows a Zoom meeting interface. On the left, a presentation slide is displayed with a diagram of a plant and text in Turkish. The text on the slide reads: "Aynı tohum partisinde, aynı üründen farklı çeşitlerinden veya birden fazla tohum türünden oluşan tohumları bir arada ekimini sağlamaktır." and "Çoğulikle çimlenen aynı diğık olan bitirler, ekim işlemlerini daha verimli hale getirenk daha başarılı sonuçlar verdiği bilinilmektedir. %60 çimlenen orama sahip tohumlardan iki tohum ayırmaya peşter, %84 oranında iki fide oluşumu sağlanmaktadır (Corrad, 2012)." On the right, a video feed shows a man speaking. Below the video feed, the names of other participants are listed: "Hall 3 Doğancan...", "Hall 3 Doç. Dr. B...", "S1-H3-Ayşe Nur...", and "S1-H3-Ayşe Nur Feytaç". At the bottom, the Zoom control bar is visible with icons for mute, video, chat, and other functions.



The screenshot shows a Zoom meeting grid with multiple participants. The grid is arranged in a 4x5 layout. The participants are: Row 1: S1-H3-Ayşe Nur Feytaç, Bİlgı Seli, H3 Özgürce Sargı, S1-H11 Hakan Nİlbaşı, H1-TS-Dr.İ.C. Yekta KROH-O...; Row 2: HALİM ERAB-İzzet FİDAN, Halger İbrahim, H21 Ökostan İbrahim... SEST, H6 Aram Fatma, H7 Mahmoud Oudghiri; Row 3: H5 Nara Ancha/İTİE, H12 Sara ZELLEG, Bİlgı Seli, h7 Mahmoud O..., Ganaoui Marou...; Row 4: h25 Berta Putri, H6 Ghislare Bouazza, S1H9-Mod-Dr.C..., h11 Amjad khan, h10 Nada Zine; Row 5: İnapuâ ebad, Sidra Haroon (Session 1, Hall 7), Noor Fatima, Sara Bağcıyort... The Zoom control bar is visible at the bottom.

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**KEYNESYEN YAKLAŞIM VE WAGNER YASASI: TEORİK BİR PERSPEKTİF<sup>1</sup>****Doç. Dr. Fuat LEBE<sup>1</sup>/ Ercüment ÜÇKARDEŞ<sup>2</sup>****<sup>1</sup>Osmaniye Korkut Ata Üniversitesi İİBF İktisat Bölümü, Osmaniye / Türkiye.  
[fuatlebe@osmaniye.edu.tr](mailto:fuatlebe@osmaniye.edu.tr), <https://orcid.org/0000-0003-4633-8376>****<sup>2</sup>Osmaniye Korkut Ata Üniversitesi Lisansüstü Eğitim Enstitüsü, İktisat ABD, Osmaniye / Türkiye.****Özet**

Keynesyen yaklaşım, ekonomik kriz dönemlerinde devlet müdahalesinin önemini vurgulayan bir teoridir. John Maynard Keynes'in öncülüğünde gelişen bu yaklaşım, piyasa mekanizmalarının tam olarak işlemediği durumlarda devletin maliye ve para politikaları ile ekonomik dengeyi sağlaması gerektiğini savunur. Keynesyen ekonomi, özellikle Büyük Buhran sonrası önem kazanmış ve devlet harcamalarının artırılması yoluyla talebin uyarılması gerektiği anlayışını benimsemiştir. Wagner Yasası ise, kamu harcamalarının ekonomik gelişmeyle birlikte arttığını savunan bir teoridir. Adolf Wagner tarafından ortaya atılan bu yasa, devletin büyüyen ekonomilere paralel olarak daha fazla hizmet sağlama ve kamu hizmetlerine yatırım yapma gerekliliğini vurgular. Bu yasa, özellikle sanayileşme ve kentleşme süreçlerinde devletin ekonomik etkinliğinin arttığını belirtir. Bu iki yaklaşım, kamu harcamalarının artırılması ve devletin ekonomik süreçlere müdahalesinin gerekliliği konusunda ortak bir anlayışa sahiptir. Keynesyen yaklaşım, kısa vadeli ekonomik istikrarı sağlamak amacıyla devlet müdahalesini savunurken, Wagner Yasası ise uzun vadede devletin rolünün sürekli olarak arttığını ifade eder.

Bu çalışmanın amacı, kamu harcamalarının etkisini ele alan Wagner yasası ile Keynesyen yaklaşımı ortaya koyup, teorik açıdan genel bir değerlendirme yapmaktır. Bu amaçla, gerek Türkiye ekonomisi gerekse diğer ülke ekonomilerini ekonometrik yöntem kullanarak ele alan mevcut literatür çalışmaları da gözden geçirilmiştir. Böylece bu konuda geniş bir perspektif sunulmaya çalışılacaktır. Genel değerlendirme sonucunda önemli tespitlere ulaşılmış olup, politika yapıcılarına kayda değer önerilerde bulunulmuştur.

**Anahtar Kelimeler:** Wagner Yasası, Keynesyen Yaklaşım, Kamu Harcamaları, Etkinlik.

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## THE KEYNESIAN APPROACH AND THE WAGNER'S LAW: A THEORETICAL PERSPECTIVE

### Abstract

The Keynesian approach emphasizes the importance of state intervention during economic crises. Developed under the leadership of John Maynard Keynes, this approach argues that when market mechanisms fail to function fully, the state should intervene through fiscal and monetary policies to achieve economic balance. Keynesian economics became particularly important after the Great Depression, advocating for increased government spending to stimulate demand. Wagner's Law, on the other hand, argues that public expenditures increase along with economic development. Proposed by Adolf Wagner, this law stresses the necessity for the state to provide more services and invest in public services in growing economies. It suggests that, especially during industrialization and urbanization processes, the role of the state in economic activity expands. Both approaches share a common understanding of the need for increased public spending and state intervention in economic processes. While the Keynesian approach supports state intervention to stabilize the economy in the short term, Wagner's Law suggests that the role of the state continuously increases in the long run.

The aim of this study is to present the Wagner's law and the Keynesian approach to the impact of public expenditures and to make a theoretical overview. For this purpose, the existing literature on the Turkish economy and the economies of other countries using econometric methods will be reviewed. Thus, a broad perspective on this subject will be tried to be presented. As a result of the overall evaluation, important findings have been reached and significant recommendations have been made to policy makers.

**Keywords:** Wagner's Law, Keynesian approach, Public Expenditures, Efficiency.

## 1. GİRİŞ

Kamu harcamaları ve ekonomik büyüme arasındaki ilişki, ekonominin siyasi ve ekonomik istikrarı üzerindeki etkileri açısından literatürde sıkça ele alınmış bir konudur. Bu ilişki, kamu harcamalarının ekonomik dalgalanmaları dengeleyerek refahı artırma potansiyeli ile daha da önem kazanmaktadır. Teorik olarak bu ilişki, Wagner ve Keynesyen görüşlerine göre açıklanabilir. Wagner Yasası, ekonomik büyümenin artmasıyla birlikte kamu harcamalarının da arttığını belirtir; büyüyen ekonomilerdeki refah artışı bireylerin toplumsal ihtiyaçlarını artırır ve bu da kamu harcamalarının artmasına yol açar. Öte yandan Keynesyen yaklaşım, kamu harcamalarındaki artışın doğrudan ekonomik büyümeyi tetikleyeceğini savunur. Bu iki teori, kamu harcamalarının ekonomik büyüme üzerindeki etkisini anlamamıza yardımcı olmaktadır (Şanlısoy ve Sunal, 2016, s. 103).

İktisat biliminde, ekonomik faaliyetlerin piyasa ekonomisi prensipleriyle mi yoksa kamu müdahalesiyle mi düzenlenmesi gerektiği temel bir tartışma konusudur. Bu tartışmanın odak noktası, kamu harcamalarının ekonomik faaliyetler ve büyüme üzerindeki etkisi ve bu etkinin doğasıdır. Günümüzde, hem geçiş ekonomilerinde hem de gelişmiş ekonomilerde, milli gelirin önemli bir bölümünü kamu harcamaları oluşturmakta ve bu durum, kamu harcamaları ile ekonomik büyüme arasındaki ilişkinin incelenmesini kaçınılmaz kılmaktadır (Esen ve Bayrak, 2015, s. 232).

*Kamu harcamaları ile ekonomik büyüme* konusu, ekonomi politikalarının belirlenmesinde ve ulusal kalkınma hedeflerine ulaşmada merkezi bir role sahiptir. Bu konunun önemi, devletin kamu hizmetleri ve altyapı yatırımları gibi alanlarda yaptığı harcamaların, ekonominin genel sağlığını ve büyüme oranlarını nasıl etkilediğini anlamaktan kaynaklanır. Kamu harcamalarının, istihdam yaratma, gelir dağılımı adaletini sağlama ve ekonomik durgunluk dönemlerinde stabilizasyon aracı olarak kullanılma gibi çok yönlü etkileri bulunmaktadır.

Bir yandan kamu harcamaları, eğitim ve sağlık gibi temel hizmetlerin sağlanmasında ve sosyal refahın artırılmasında kritik bir rol oynarken, diğer yandan ekonomik büyüme için gerekli olan altyapı ve araştırma-geliştirme faaliyetlerine yatırım yaparak inovasyon ve teknolojik ilerlemeyi teşvik etmektedir. Ayrıca, özellikle ekonomik kriz dönemlerinde kamu harcamalarının artırılması, özel sektör yatırımlarını destekleyerek ekonominin canlandırılmasında önemli bir etmen olabilmektedir.

Bu konunun incelenmesi, devlet harcamalarının ekonomik büyüme üzerindeki etkisini ve bu ilişkinin nasıl optimize edilebileceğini anlamak için önemlidir. Aynı zamanda, kamu harcamalarının etkin ve verimli bir şekilde yönetilmesi, sürdürülebilir mali politikaların oluşturulması ve ekonomik kaynakların doğru alanlara

yönlendirilmesi açısından da kritik bir konudur. Nihai olarak, ekonomik istikrarın ve devamlılık arz eden gelişimin sağlanabilmesi adına, devlet harcamaları ile ekonomik büyüme arasındaki bağı ayrıntılı bir biçimde idrak edilmesi zorunludur.

Bu çalışmanın amacı, kamu harcamaları ile ekonomik büyüme arasındaki ilişkiyi ortaya koymaktır. Bu amaçla iki değişken arasındaki ilişkinin yönü ve derecesi teorik bir perspektifte genel olarak değerlendirilmiştir. Ayrıca, Türkiye ekonomisi için kamu harcamaları ile ekonomik büyüme arasındaki ilişki görsel meteryaller kullanılarak ele alınması da amaçlanmaktadır. Böylece, ekonomik büyüme ile kamu harcamaları arasındaki ilişki ortaya konularak karar birimlerine politika önerilerinde bulunulması hedeflenmektedir. Bu çerçevede çalışmamız 4 bölümden oluşmaktadır. Giriş niteliğindeki birinci bölümün ardından, ikinci bölümde kamu harcamaları ile ekonomik büyüme ilgili kavramsal çerçeve yer almaktadır. Üçüncü bölümde kamu harcamaları ile ekonomik büyüme arasındaki ilişkinin teorik çerçevesi (Wagner ve Keynesyen yaklaşımları) ile söz konusu iki değişken arasındaki ilişkiyi test etmeye yönelik yapılmış olan çalışmalar genel olarak değerlendirilmektedir. Dördüncü bölümde ise sonuç kısmına yer verilecektir.

## 2. KAVRAMSAL ÇERÇEVE

### 2.1. Kamu Harcamalarının Tanımı ve Kapsamı

Kamu harcamaları konusunda literatürde çok çeşitli tanımlamalar mevcuttur, bu tanımların farklılaşmasında ekonomik düşünce akımları ve dönemseller etkenler belirleyici olmuştur. Genel anlamda kamu harcamaları, devletin toplumun ortak ihtiyaçlarını karşılamak üzere yaptığı harcamalar olarak ifade edilir. Bu tanım kapsamında, devletin adalet ve güvenlik gibi temel hizmetleri sağlama yükümlülüğü ve toplum düzeninin sürdürülebilirliği için yapılması gereken harcamalar yer alır. Bu harcamaların gerçekleştirilmesi, devletin sadece işlevselliğini değil, aynı zamanda sosyal ve ekonomik düzenin devamlılığını da sağlar (Mwakibete, 2014, s. 5205; Uluatam, 1997, s. 221).

Kamu harcamaları, devletin, sosyal güvenlik idarelerinin, mahalli idarelerin ve bağlı organlarının gerçekleştirdiği harcamalardır ve bu harcamalar üç ana kategoride incelenir: işletme giderleri, yeniden dağıtım harcamaları ve yatırım harcamaları. İşletme giderleri, kamu hizmetlerinin işleyişi için gerekli harcamaları (personel, bakım, malzeme satın alma gibi) içerir. Yeniden dağıtım harcamaları, hane halkına ve şirketlere yapılan nakit yardımları ve sübvansiyonları kapsar. Yatırım harcamaları ise kamu üretken sermayesinin artırılmasını hedefler (Insee, 2022). Genel anlamda, devletin ve yerel idarelerin sağlık, eğitim, ulaştırma, yargı ve emniyet gibi çeşitli sektörlerdeki masraflarını kapsayan kamu giderleri, bir milletin ekonomik sağlığının bir göstergesi olarak kabul edilir (Uluatam, 1997, s. 211; Çelebi, 1994, s. 1). Literatürde, kamu harcamalarının dar

ve geniş tanımı arasında ayırım yapılır: dar tanım, devletin özel sektör dışı birimlerine yapılan harcamaları, geniş tanım ise devletin özel sektör birimlerine de yaptığı harcamaları içerir (Kalenderoğlu, 2005, s. 31).

## 2.2. Kamu Harcamalarının Sınıflandırılması

Kamu harcamalarının sınıflandırılması, harcama yapılacak alanların belirlenmesi, bütçe hazırlama süreçlerine katkı sağlaması, devlet işlevlerinin tanımlanması, denetim ve kontrol mekanizmalarının etkinliği, bütçe-plan uyumunun sağlanması ve mali politika araçlarının kullanımının değerlendirilmesi gibi birden fazla fayda sunmaktadır. Bu sınıflandırma, kamu harcamalarının görevleri, ekonomik özellikleri, tüzel kişilikler, kalkınma planlarıyla olan ilişkileri ve sosyal-mali politikadaki rolleri gibi çeşitli ölçütlere göre yapılabilir. Kamu giderlerinin hem toplumsal hem de ekonomik etkilerinin incelenmesi, mali ve toplumsal getirilerinin ölçülmesi ve bu giderlerin maliye politikası araçları içerisindeki etkinliğinin tespit edilmesi süreçlerinde, kapsamlı bir tasnifin oynadığı rol kritik öneme sahiptir (Orhaner, 2007, s. 112-113).

Kamu harcamalarının gelişimini izlemek ve bu harcamalardaki artış veya azalış eğilimlerini tespit etmek, etkin bir sınıflandırma sistemine bağlıdır. Bu sınıflandırma, harcamaların hangi alanlarda yoğunlaştığını ve bütçe kaynaklarının nasıl dağıtıldığını gösterir. Çalışmamız kapsamında, kamu giderlerini ekonomik, idari ve işlevsel boyutları ile ayırtmaya yönelik bir inceleme yapmayı hedefliyoruz. Ekonomik sınıflandırma, harcamaların ekonomik etkilerini; idari sınıflandırma, hangi kamu kurumlarının harcamalarını gerçekleştirdiğini; fonksiyonel sınıflandırma ise harcamaların hangi toplumsal ve ekonomik fonksiyonları yerine getirdiğini inceler. Bu sınıflandırma yaklaşımları, kamu harcamalarının analizinde ve değerlendirmesinde temel bir yöntem olarak işlev görür ve kamu politikalarının etkinliğinin ölçülmesinde kritik rol oynar (Uluatam, 1997, s. 149).

### 2.2.1. Ekonomik Ayrıma Göre Sınıflandırma

Kamu harcamalarının ekonomik sınıflandırılmasında, harcamaların tüketim veya yatırım amaçlı olup olmadığı, üretim kapasitesine katkısı ve mal veya hizmet alımı karşılığında yapılması gibi faktörler dikkate alınır. Bu sınıflandırma, hizmet ve gider planlaması ile kaynakların etkin kullanımında önemli bir rol oynar. Ekonomik açıdan, kamu harcamaları genellikle cari harcamalar, yatırım harcamaları ve transfer harcamaları olmak üzere üç ana kategoriye ayrılır. Cari harcamalar, günlük işletme ve idari giderleri kapsarken, yatırım harcamaları altyapı projeleri gibi uzun vadeli gelişmelere yöneliktir. Transfer harcamaları ise sosyal yardımlar gibi doğrudan nakdi veya maddi destek sağlar. Bu sınıflandırma, kamu harcamalarının ekonomik etkilerini daha net bir şekilde anlamamıza ve değerlendirmemize olanak tanır (Orhaner, 2007, s. 115).

### 2.2.2. İdari Ayrıma Göre Sınıflandırma

İdari sınıflandırma, kamu harcamalarını, ilgili kurumların idari yapılarına göre kategorize etmekte ve bu kurumların harcamalarının yerleri ve büyüklükleri hakkında ayrıntılı bilgi sunmaktadır. Bu sınıflandırma, kamu hizmetlerinin etkin bir şekilde yürütülmesi için idari düzen, koordinasyon ve görev paylaşımı açısından kritik öneme sahiptir. İdari sınıflandırma, ayrıca devletin harcama yapan birimleri arasında ayırım yapar ve bu yüzden organik sınıflandırma olarak da adlandırılır; Cumhurbaşkanlığı, Yargıtay, TBMM gibi farklı idari birimlerin ayrımı buna örnektir (Eker ve Tüğen, 1994, s. 81; Kalenderoğlu, 2005, s. 41). Kamu hizmetleri sunan kurumlar arasındaki idari sınıflandırmaya göre ayrılan bütçeler, zaman ve yer bakımından değişkenlik gösterebilir ve bu durum, aynı kurumun harcamalarının zaman içinde analizini ve uluslararası karşılaştırmaları güçleştirebilir. Bu nedenle, günümüzde idari sınıflandırma, fonksiyonel sınıflandırmaya bırakmaya başlamıştır (Türk, 2005, s. 52-53).

Kamu harcamalarının idari sınıflandırılması, dünya genelinde sıkça tercih edilen bir yöntemdir ve bu sınıflandırma, harcamaların idari, teknik ve siyasi açıdan nasıl gerçekleştirildiğini ele alır (Aksoy, 2011, s. 90). Bu yaklaşımda, devletin harcama yapan organlarının idari yapıya uygun şekilde harcama yapıp yapmadığı önemlidir. İdari sınıflandırma, devlet organlarının harcamalarını dikkate aldığı için "organik sınıflandırma" olarak da adlandırılır ve kamu idaresinin düzenini, koordinasyonunu ve iş bölümünü destekler. Her ne kadar idari sınıflandırma birçok ülkenin bütçesinde yer alsada da, devletin dinamik işleyişine uyum sağlayamama gibi olumsuzlukları da beraberinde getirir. Bu olumsuz etkiler nedeniyle, son dönemlerde hizmet odaklı ve daha esnek olan fonksiyonel sınıflandırma, idari sınıflandırmanın yerini almaya başlamıştır (Şanlısoy ve Sunal, 2016, s. 17).

### 2.2.3. Fonksiyonel Ayrıma Göre Sınıflandırma

Fonksiyonel sınıflandırma, kamu harcamalarının hizmet odaklı bir yaklaşımla kategorize edilmesi sürecidir ve bu yöntemde, harcamaların yönlendirildiği hükümet faaliyetleri ve işlevleri öne çıkar (Eker ve Tüğen, 1994, s. 82). İdari sınıflandırmada harcamalar, gerçekleştiren kurumlar temelinde tanımlanırken, fonksiyonel sınıflandırmada odak, devletin hangi hedefler doğrultusunda kaynak ayırdığı üzerinedir (Türk, 2005, s. 54-55). Bu sınıflandırma yaklaşımı, devletin hem geleneksel hem de sosyo-ekonomik görevlerini ele alır ve bir görev birden fazla idari birim tarafından icra edilse dahi, hepsi aynı kategoride değerlendirilir. Örneğin, eğitim fonksiyonunda, Milli Eğitim Bakanlığı dışında diğer kuruluşların eğitim harcamaları da dahil edilir (Orhaner, 2007, s. 113). Fonksiyonel sınıflandırma, kamu hizmetlerinin etkin yürütülmesi, kaynakların etkin kullanımı ve bilimsel çalışmalara katkı sağlama gibi yönlerden önemlidir (Akdoğan, 1999, s. 82). Bu



sınıflandırma, eğitim, sağlık, ulaştırma, savunma, adalet gibi temel kamu hizmetleri alanlarını kapsar ve kamusal fonların kullanımının izlenmesi ve maliyetlerin hesaplanması açısından kolaylık sağlar (Bıçak, 1996, s. 36-37).

## 2.2. EKONOMİK BÜYÜME

### 2.2.1. Ekonomik Büyüme Kavramı ve Tanımı

Ekonomik büyüme, bir ekonominin reel üretimindeki zamanla ortaya çıkan yükseliş olarak ifade edilir ve kişi başı gelirdeki artış ya da bir ülkenin üretim hacminin büyümesi biçiminde gözlemlenir (Ünsal, 2009, s. 14-15). Ekonomik genişleme, bir ülkenin üretim olanakları eğrisinin sağa doğru yer değiştirmesi ile bağdaştırılır ve bu yer değiştirme, teknolojik gelişmeler, işgücü verimliliğindeki iyileşmeler ve endüstriyel kapasitenin daha etkin kullanılması gibi etkenlerle tanımlanır (Eğilmez ve Kumcu, 2004, s. 125; Kibritçioğlu, 1998, s. 207). Ekonomik büyüme ve ekonomik kalkınma terimleri sıklıkla karıştırılsa da, kalkınma daha geniş bir kapsama sahiptir ve ekonomik yapının yanı sıra sosyal, kültürel ve siyasi yapıdaki değişiklikleri de içerir (Han ve Kaya, 2004, s. 269). Ekonomik genişleme, genellikle daha sınırlı bir bağlamda ele alınır ve GSYİH'daki artış gibi niceliksel büyüklüklerle tanımlanır; ancak bu, yapısal dönüşüm ya da sosyal ve kültürel ilerleme konusunda ayrıntılı bilgi sağlamaz (Kar ve Taban, 2005, s. 8-9).

### 2.2.2. Ekonomik Büyümenin Temel Belirleyicileri

Ekonomik büyümeyi etkileyen temel faktörler işgücü, sermaye, doğal kaynaklar ve teknolojidir. *İşgücü*, ekonomik büyümenin ana unsurlarından biridir ve verimlilik ile nitelik bağlamında değerlendirilir. Nüfus miktarı ve yapısı, işgücü arzını etkileyerek ekonomik büyümeyi de belirler (Han ve Kaya, 2004, s. 269; Pekin, 1995, s. 18). *Sermaye*, üretimde kullanılan araçların niceliği ve niteliği ile ekonomik büyümeyi olumlu yönde etkiler. Fiziki ve beşeri sermaye kavramları, sermayenin üretim ve büyüme üzerindeki etkilerini açıklar (Samuelson ve Nordhaus, 1989, s. 855; Dinler, 1998:17; Kibritçioğlu, 1998, s. 207). *Doğal kaynaklar* sabit miktarlarda bulunur ve ekonomik büyümeyi etkileyen faktörler arasındadır, ancak belirleyici değildir. Kullanıma açılan doğal kaynaklar, ekonomik büyümeye olumlu katkı sağlar (Tomanbay ve Gümüş, 2004, s. 407; Dinler, 1998, s. 16). *Teknoloji* ise üretimdeki girdilerin çıktılara dönüşümünü ve teknolojik gelişmeyi temsil eder. Teknolojik gelişmeler, üretimde verimlilik ve nitelik artışı sağlayarak ekonomik büyümenin artmasına katkıda bulunur (Jones vd., 2001, s. 73; Samuelson ve Nordhaus, 1989, s. 858; Fikir, 2010, s.53).

### 3. KAMU HARCAMALARI İLE EKONOMİK BÜYÜME İLİŞKİSİ

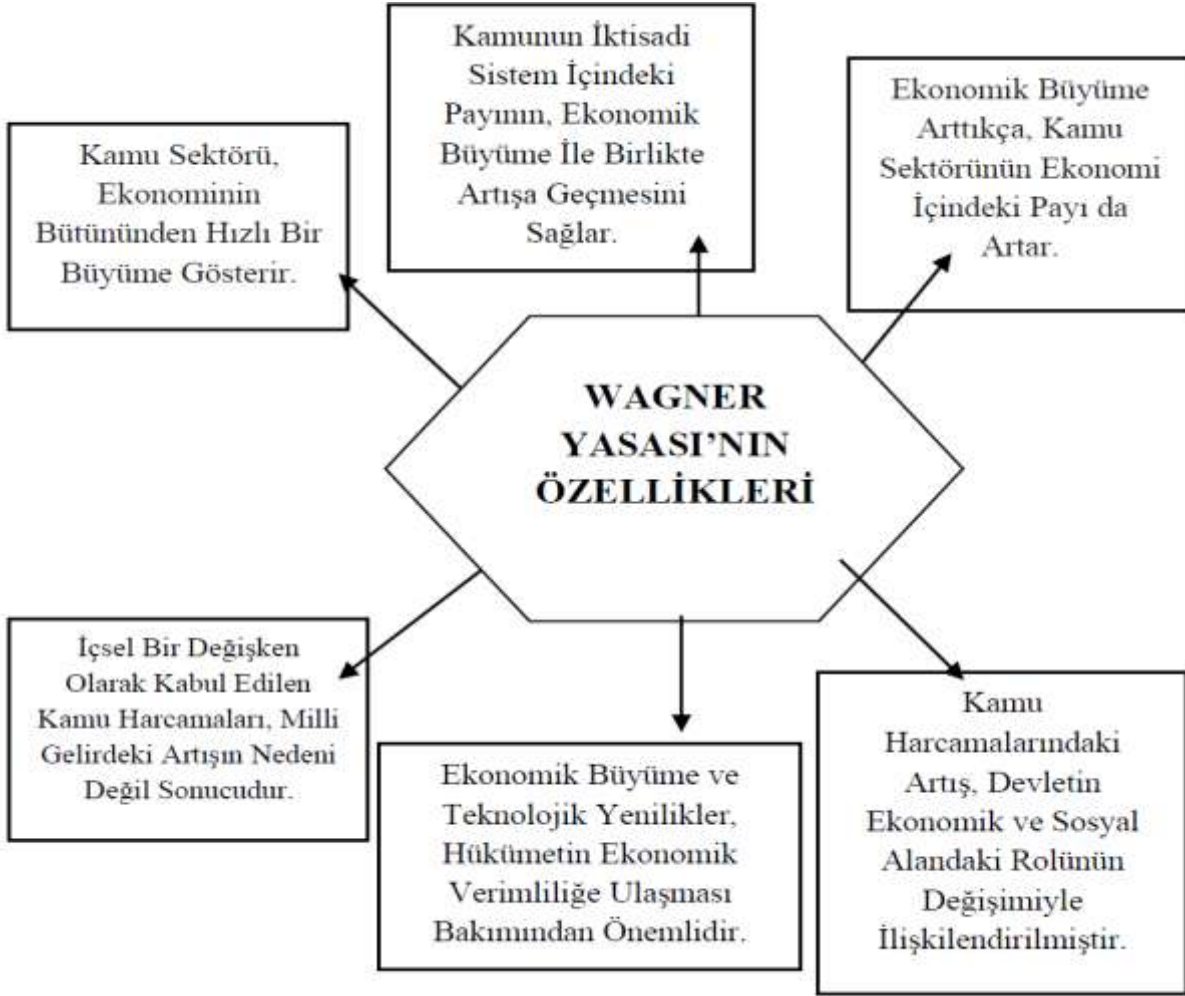
Günümüz iktisat dünyasında, farklı ekonomik ekollerin temsilcileri arasında yaygın bir fikir birliği bulunmaktadır: Özellikle İkinci Dünya Savaşı sonrasında, hem gelişmiş hem de gelişmekte olan ülkelerde devletin ekonomideki rolü büyük ölçüde genişlemiş ve özel sektör üzerinde düzenleyici etkisi giderek artmıştır. Bu değişim, devletin ekonomik faaliyetlere müdahalesinin artması ve piyasa dinamiklerine daha fazla etki etmesi şeklinde kendini göstermektedir, bu da ekonomi politikalarının şekillenmesinde devletin rolünün tarihsel olarak nasıl evrildiğini gösteren önemli bir göstere olarak kabul edilmektedir (Landau, 1986, s.35).

Son on beş yıl boyunca yapılan çok sayıda uygulamalı araştırma, ekonomik büyüme ile yakından ilişkili olduğu düşünülen kamu harcamalarının çeşitlerini belirlemeye odaklanmıştır. Bu çalışmalar, kullanılan veri setleri ve uygulanan ekonometrik yöntemler açısından çeşitlilik göstermekte ve sıklıkla birbirine zıt sonuçlar ortaya koymaktadır. Bu durum, kamu harcamalarının ekonomik büyüme üzerindeki etkisinin çok boyutlu ve karmaşık doğasını göstermektedir, ayrıca ekonometrik modelleme yaklaşımlarının ve veri setlerinin çeşitliliği, araştırmacıların bu konudaki anlayışlarının sürekli olarak gelişmesine katkıda bulunmaktadır. Bu çeşitlilik, farklı ekonomik koşullar ve politika yapısı altında kamu harcamalarının ekonomik büyüme üzerindeki etkilerini daha iyi anlamamıza yardımcı olacak şekilde, araştırmaların yöntemsel ve teorik çerçevesinin genişlemesine yol açmaktadır (Yılmaz ve Kaya, 2005, s.258).

Bu konuda temel iki temel yaklaşım mevcuttur. Bunlardan birincisi Alman iktisatçı Adolph Wagner ortaya konulan *Wagner Yaklaşımı* olarak bilinen yaklaşımdır. İkincisi ise John Maynard Keynes tarafından ortaya konulan *Keynesyen Yaklaşımı*'dir.

#### 3.1. Wagner Yaklaşımı

Wagner yaklaşımı Adolph Wegner tarafından ortaya konulmuş olup, *Wagner Yasası* olarak bilinmektedir. Bu yasanın temel analizi, kamu harcamalarındaki artış hızını göstermektir. Bir başka ifadeyle kamu harcamalarının milli gelirden daha hızlı artış gösterdiğini ve bu harcamaların milli gelir içindeki oranı da zamanla arttığını savunmaktadır. Özetle bu yasa temel olarak ülke ekonomilerinde kişi başı GSYİH arttıkça, nispi olarak kamu harcamalarının toplam harcama içindeki payının da artacağı prensibine dayanmaktadır (Yavuzyiğit, 2022: 64).



Şekil 1: Wagner Yasası

Kaynak: Yavuzyiğit, 2022: 65

Wagner dışında kamu harcamaları ile ilgili çalışma yapan araştırmacılar da mevcuttur. Mesala, bazı çalışmalarda kamu harcamalarının zaman içerisinde daima arttığı yönünde bulgular elde eden Peacock ve Wiseman bu araştırmalardan biridir. 1890-1960 yılları arasında kamu harcamalarındaki artışın kademeli bir gelişme/büyüme kaydettiğini ortaya koymuş olup, *sıçrama etkisi-teorisini* ortaya koymuşlardır (Cullis and Jones, 1992: 385). *Sıçrama etkisi teorisini*, kamu harcamalarının giderek merkezileşmeye başladığı bir görüşü kabul etmektedir. Savaş veya diğer olağanüstü durumlarda, kamu harcamalarının sıçrama yaptığını, olağanüstü dönem bittikten sonra ise, bu harcamaların azalmadığını, aynı düzeyde devam ettiğini göstermektedir. Bu durum devletlerin harcama kategorileri ile karşılaştırıldığında, devamlı ancak düzenli olmayan (dalgalı) artışların ortaya çıktığını göstermektedir (Musgrave and Musgrave, 1976: 5-8).

### 3.2. Keynesyen Yaklaşım

Keynesyen yaklaşım, Wagner Yasası'nın tersine, kamu harcamalarındaki artışının ekonomik büyüme üzerinde artış yönünde etkisi olduğunu savunmaktadır. Başka bir ifadeyle, kamu harcamalarından ekonomik büyümeye doğru bir ilişki olduğunu iddia etmektedir. Öte yandan bu etkinin artış yönünde olacağını da belirtmektedir. Ayrıca, özel tüketim ve yatırımların yetersiz olduğu kriz dönemlerinde, işsizliği ve eksik istihdamı azaltmada talep yönlü politikaların uygulanması ve dolayısıyla kamu harcamalarının artırılması gerektiğini de açıklamaktadır. Böyle bir durum neticesinde hem toplam talebin hem de milli gelirin artacağını ifade etmektedir. (Yavuzyiğit, 2022: 67-68).

### 3.3. Literatür Çalışmalarının Genel Değerlendirmesi

Wagner Yasası ile Keynesyen görüş arasındaki temel farklılık kamu harcamaları (PC) ile ekonomik büyüme (EG) arasındaki ilişkinin yönü ve etkisi açısındandır. Yani Wagner Yasası, ekonomik büyümedeki (EG) bir artış kamu harcamalarını (PC) artıracığını (EG→PC) savunur iken; Keynesyen görüş kamu harcamalarındaki (PC) artışın ekonomik büyümeyi (EG) artıracığını (PC→EG) ifade etmektedir.

Bu iki yaklaşımı test etmeye yönelik çeşitli ülke ve bölgeler için gerek zaman serisi gerekse panel çalışmaları yapılmıştır. Söz konusu değişkenlerin birbirinin nedeni veya sonucu olduğu ile ilgili iki teorik yaklaşım mevcut olduğundan dolayı yapılan çalışmaların çoğu nedensellik testleri üzerine kurulmuştur. Bu iki yaklaşımı test etmeye yönelik çeşitli bölge ve ülkeler için test eden ekonometrik çalışmaların varmış olduğu sonuçlar aşağıdaki Şekil 2 ve Şekil 3'de özetlenmektedir.

Yazar	Dönem	Sonuç
Altunöz (2014)	1975-2002	Keynesyen Yaklaşımın Türkiye ekonomisi için geçerli olduğu sonucuna varılmıştır.
Cergibozan, Çevik, Demir (2017)	1960-2015	Wagner Yasasının Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Tuna (2013)	1961-2012	Wagner Yasasının Türkiye ekonomisi için geçerli olmadığı sonucuna ulaşılmıştır.
Gacaner (2005)	1987Q1-2003Q4	Wagner Yasasının Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Selen, Eryiğit (2009)	1923-2006	Wagner Yasasının Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Dübüş (2017)	1982-2015	Wagner Yasasının Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Recepoglu (2016)	2004-2011, il ve bölge düzeyi	Düşük gelir bölgelerinde, gelişmiş ve gelir düzeyi yüksek bölgelere kıyasla ekonomik büyümeye bağlı olarak kamu harcamalarında daha fazla artış görülmüştür. Bu bölgeler için Wagner Yasası doğrulanmıştır.
Güder, Yücekaya, Şenyurt (2016)	2006-2015	Wagner Yasasının Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Arısoy (2005)	1950-2003	Wagner Yasasının Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Ulutürk (2001)	1963-1994	Keynesyen Yaklaşımın Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Uzay (2002)	1960-1999	Keynesyen Yaklaşımın Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Halicioğlu (2003)	1960-2000	Hem Keynesyen Yaklaşım Hem Wagner Yasasının geçerli olduğu sonucuna ulaşılmıştır.
Artan ve Berber (2004)	1987-2003	Keynesyen Yaklaşımın Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Altay ve Altın (2008)	1980-2005	Keynesyen Yaklaşımın Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Uysal ve Mucuk (2009)	1980-2006	Keynesyen Yaklaşımın Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Aytaç ve Güran (2010)	1987-2005	Wagner Yasasının Türkiye ekonomisi için geçerli olduğu sonucuna ulaşılmıştır.
Taşseven (2011)	1960-2006	Hem Keynesyen Yaklaşım Hem Wagner Yasasının geçerli olduğu sonucuna ulaşılmıştır.
Şimşek (2004)	1965-2002	Hem Keynesyen Yaklaşım Hem Wagner Yasasının geçerli olduğu sonucuna ulaşılmıştır.

Şekil 2: Türkiye Ekonomisini Konu Alan Çalışmalar

Kaynak: Yavuz ve Doruk, 2018: 82.

Şekil 2 ve 3'deki Türkiye konu alan çalışmalara baktığımızda daha çok Wagner Yasası'nı teyit eden bulgular elde ettikleri söylenebilir. Araştırmacıların kullandığı yöntem veya veri seti farklı olsa da ağırlıklı olarak (% 55) vardık sonuç; ekonomik büyümedeki artış kamu harcamalarındaki artmasına neden olduğu (Wagner Yasası) yönündedir (Şekil 2 ve 3).



Yazar/Yıl	Yöntem	Sonuç
Yamak ve Küçükkale (1997)	Johansen-Juselius eşbütünlüşme ve Engle-Granger nedensellik testi	Kamu harcamaları ile ekonomik büyüme arasında uzun dönem ilişki vardır.
Kar ve Taban (2003)	KED eşbütünlüşme analizi	Eğitim ve sosyal güvenlik harcamalarının ekonomik büyüme üzerindeki etkisi pozitif, sağlık harcamalarının etkisi negatiftir.
Işık ve Alagöz (2005)	Johansen eşbütünlüşme testi ve granger nedensellik analizi	Seriler arasında uzun dönemli ilişki ve çift yönlü nedenselliğin olduğu sonucuna ulaşılmaktadır
Arısoy (2005)	Johansen eşbütünlüşme testi ve granger nedensellik analizi	Uzun dönemde ekonomik büyümeden kamu harcamalarına doğru tek yönlü nedensellik vardır.
Başar vd. (2009)	Sınır Testi Yaklaşımı	Ekonomik büyüme ile kamu harcamaları arasında herhangi bir ilişki yoktur.
Bağdıgan ve Beşer (2009)	Toda-Yamamoto Nedensellik analizi	Seriler arasında herhangi bir nedensellik yoktur.
Aytaç ve Güran (2010)	VAR ve Granger nedensellik analizi	Ekonomik büyümedeki artış kamu harcamalarını artırmaktadır.
Oktayer (2011)	Johansen ve Juselius eşbütünlüşme ve VEC Granger Nedensellik testleri	Seriler arasında çift yönlü nedensellik ilişkisi bulunmuştur.
Yüksel ve Songur (2011)	Engle-Granger eşbütünlüşme testi ve Granger nedensellik testi	Borç-faiz ödemeleri dışında tüm değişkenlerin ekonomik büyüme ile uzun dönem ilişkisi vardır.
Gül ve Yavuz (2011)	Eşbütünlüşme ve Granger Nedensellik Testleri	Kamu harcamalarından ekonomik büyümeyle doğru tek yönlü ilişki ve seriler arasında uzun
Kabaklarlı ve Er (2014)	Sınır testi yaklaşımı	Ekonomik büyümedeki artışın kamu harcamalarında azalışa neden olmaktadır.
Diler (2016)	ARDL yaklaşımı ve Toda-Yamamoto nedensellik testi	Kamu harcamaları ve ekonomik büyüme arasında eşbütünlüşme ilişkisi varken, nedensellik ilişkisi tespit edilememiştir.
Şanlısoy ve Ünal (2016)	Toda-Yamamoto nedensellik testi	Kurulan beş modelden yalnızca bir tanesinde nedensellik ilişkisi bulunurken, diğer dört modelde değişkenler arasında bir ilişki bulunamamıştır
Kolçak vd. (2017)	VECM yöntemi	Kamu harcamalarının uzun dönemde ekonomik büyümenin nedeni olduğu sonucu bulunmuştur.
Pata ve Tütüncü (2017)	Maki eşbütünlüşme testi, DOLS ve FMOLS analizi	Kamu harcamalarının ekonomik büyümeyi artırdığı sonucuna ulaşılmaktadır.
Şit ve Karadağ (2018)	Toda-Yamamoto Nedensellik Testi	Tüm değişkenler ile ekonomik büyüme arasında çift yönlü nedensellik ilişkisi tespit edilmiştir.
Fırat ve Tuğlu (2019)	ARDL sınır testi yaklaşımı	Kamu harcamaları hem kısa dönemde hem de uzun dönemde büyüme üzerinde pozitif etkilidir.
Esen vd. (2020)	ARDL sınır testi yaklaşımı, Toda-Yamamoto Nedensellik Testi	Ekonomik büyümenin kamu harcamalarında artışa neden olmaktadır.

Şekil 3: Türkiye Ekonomisini Konu Alan Çalışmalar

Kaynak: Duran, 2022: 30-31

Aşağıdaki Şekil 4 ve Şekil 5’de ise diğer ülke ekonomilerini konu alan ve ekonometrik uygulama yaparak söz konusu değişkenler arasındaki ilişkiyi inceleyen çalışmalar özetlenmektedir.

Peacock-Wiseman (1961)	İngiltere 1890-1955	Peacock Wiseman Modelini ve Granger nedensellik	Wagner Yasası'nın İngiltere için geçerli olduğu sonucunu bulmuşlardır.
Mann (1980)	Meksika 1952-1976	EKK Yöntemi	Wagner Kanunu'nu destekleyici yönde sonuçlara ulaşılmıştır.
Ram (1986)	115 Ülke 1950-1980	Panel Veri Seti Teknik	Ülkelerin %60'ında Wagner kanununu doğrular yönde sonuçlanmış.
Rao (1989)	48 ülke 1960-1980	Granger Nedensellik Testi	Bazı ülkelerde, büyümeden kamu harcamalarına, bazı ülkelerde kamu harcamalarından büyümeye, bazılarında ise çift yönlü nedensellik bulmuştur.
Barro (1989)	72 Ülke 1960-1985	Basit Korelasyon yöntemi	Kamu tüketim harcamalarının yatırım oranıyla arasında negatif, kamu yatırım harcamaları ve büyüme arasında ise pozitif bir ilişki.
Courakis v.d. (1993)	Yunanistan ve Portekiz 1958-1985	EKK Eş-bütünleşme yöntemi	Wagner kanununu destekler yönde bir sonuç elde edilmiş.
Anwar v.d. (1996)	88 ülke 1960-1992	Johansen Eş-bütünleşme Granger nedensellik testini	Wagner kanununu destekler özelliklere sahip sadece 13 ülke bulunmuştur.
Oxley (1994)	İngiltere 1870-1913	Eş-bütünleşme ve Granger Nedensellik	Ekonomik büyümeden kamu harcamalarına doğru tek yönlü bir nedensellik ilişkisi
Abizadeh ve Yousefi (1996)	Güney Kore 1970-1990	Granger nedensellik testi	Sonuç, Wagner Kanunu doğrular niteliktedir.
Ansari v.d. (1997)	Gana (1963-1988), Kenya (1964-1989), Güney Afrika (1957-1990)	Granger ve Holmes-Hutton	Gana için Wagner Hipotezini, Güney Afrika için Keynes Hipotezini, Kenya için ise ne Wagner ne de Keynes Hipotezini destekleyici bulgulara rastlanmamıştır.
Yamak ve Küçükale (1997)	1950-1994	Engle-Granger ve Johansen-Juselius Eş-bütünleşme	Wagner Kanunu'nu desteklemektedir.
Sinha (1998)	Malezya 1950-1992	Granger nedensellik Testi	Değişkenler arasında ilişki bulamamıştır.
Terzi (1998)	1938-1995	Basit Regresyon, Eş-bütünleşim	Bulgular Wagner Yasası'nın geçerliliğini ortaya koyucu, destekleyici niteliktedir.
Burney ve Al-Mussallam (1999)	Kuveyt 1969-1995	EKK yöntemi	Wagner kanununu doğrular yönde sonuca ulaşamamışlardır.
Kweka ve Morrissey (2000)	Tanzanya 1965-1996	Eş-bütünleşme ve Granger Nedensellik Testi	Wagner kanununu desteklemeyen ancak Keynes'i desteklemektedir.
Arghyrou (2000)	Yunanistan 1970-1990	Eş-bütünleşme ve Granger Nedensellik	Kamu yatırım harcamalarının uzun dönemde büyümeyi pozitif yönde etkilediği

Şekil 4: Diğer Ülkeleri Konu Alan Çalışmalar-1

Kaynak: Yavuzyiğit, 2022: 76-77



Heitger (2001)	21 OECD ülkesi 1960-2000	Panel Veri Seti Teknik	Kamu harcamalarının ekonomik büyüme üzerinde pozitif bir etkiye sahiptir.
Fasano ve Wang (2001)	GCC üye ülkeler 1980-1999	Eş-bütünleşme ve Vektör Hata Yöntemi (VECM)	Değişkenler arasında herhangi bir ilişkinin varlığı tespit edilememiştir.
Al-Faris (2002)	Körfez Bölgesi 1970-1997	VAR Yöntemi	Wagner kanununu destekler yönde bir sonuç elde edilmiş.
Albatel (2002)	Suudi Arabistan 1964-1998	Eş-bütünleşme yöntemi ve Hata Terim Modeli	Sonuç, Wagner Kanunu doğrular niteliktedir.
Kar ve Ağır (2002)	1926-1994	Granger nedensellik	Eğitim harcamalarından ekonomik büyümeye doğru, ekonomik büyümeden sağlık harcamalarına doğru bir nedensellik bulgusu
Abu-Bader ve Abu-Qarn (2003)	Mısır 1975-1998, İsrail 1967-1998 Suriye 1973-1998	Çoklu Eş-bütünleşme, Varyans Ayrıştırması ve Etki-Tepki analizleri	İsrail ve Suriye için kamu harcamalarından ekonomik büyümeye doğru tek yönlü ve Mısır için çift yönlü negatif bir nedensellik ilişkisi tespit etmişlerdir.
Sjöberg (2003)	İsveç 1960-2001	Sıradan EKK yöntemi	Kamu tüketim ve yatırım harcamalarının büyümeyi pozitif yönde etkilediği, faiz harcamaları ve kamu transfer harcamalarının ise olumsuz yönde etkilediğidir.
Gacener (2005)	1987-2003	Granger Nedensellik, VAR, Eş-bütünleşme.	Wagner Kanunu'nu destekler nitelikli bulgulara ulaşılmıştır.
Arısoy (2005)	1950-2003	Johansen Eş-bütünleşme testi	Wagner Kanunu'nu destekler nitelikli bulgulara ulaşılmıştır.
Işık ve Alagöz (2005)	1985-2003	Johansen Eş-bütünleşim	Wagner Yasası'nı onaylayacak şekilde bir sonuca ulaşılmıştır.
Loizides ve Vamoukos (2005)	Yunanistan, İngiltere ve İrlanda 1950-1995	Granger nedensellik Testi	Wagner Kanununu doğrulamamaktadır.
Huang (2006)	Çin ve Tayvan 1979-2002	Sınır Testi yaklaşımı	Wagner Yasası'nı desteklememektedir.
Narayan v.d. (2007)	Fiji 1970-2002	Eş-bütünleşme ve Granger nedensellik testi	Uzun dönemde ulusal gelirden hükümet harcamalarına doğru Granger nedensellik ilişkisi vardır.
Altay ve Altın (2008)	1980-2005	EKK yöntemi	Kamu harcamalarındaki artışın ekonomik büyümeyi olumsuz etkilediğini bulmuştur.
Oktayer ve Susam (2008)	1970-2005	EKK Yöntemi	Toplam kamu harcamalarının ekonomik büyüme üzerindeki etkisi anlamlı çıkmamıştır.
Kumar (2009)	Doğu Asya Ülkeleri 1960-2007	Gregory ve Hansen yapısal kırılma tekniği	Wagner Kanunu'nun söz konusu ülkeler için geçerli olduğu

Şekil 5: Diğer Ülkeleri Konu Alan Çalışmalar-2

Kaynak: Yavuziğit, 2022: 78-79

Şekil 4 ve Şekil 5'deki çalışmalara baktığımızda da Türkiye ekonomisi için yapılan çalışmalarda varılan sonuçlara benzer bulgular elde edildiği görülmektedir. Yine farklı ekonometrik yöntem ve veriler ile yapılan zaman serisi veya panel çalışmalarının büyük çoğunluğu Wagner Yasasını teyit etmektedir.

#### 4. SONUÇ

Ekonomik büyüme teorileri, genel olarak içsel ve dışsal olmak üzere iki ana kategoride incelenir. İçsel büyüme teorileri, teknolojik gelişmelerin ve ekonomik kararların birbirleriyle olan etkileşimini vurgularken, dışsal teoriler, devlet müdahalelerinin ve dünya ekonomisiyle olan ilişkilerin ekonomik büyüme üzerindeki etkisini öne çıkarır. Türkiye ekonomisi de bu karmaşık etkileşimin bir sonucu olarak şekillenmekte olup, kamu ve özel sektörün rolleri, tasarruf oranları, politik istikrar gibi birçok faktör tarafından etkilenmektedir. Kamu harcamalarının yapısı ve finansmanı da, bu etmenler arasında yer almakta ve ekonomik büyüme üzerinde çift yönlü bir etkiye sahip olabilmektedir.

Kamu harcamaları ve ekonomik büyüme ilişkisi, Türkiye özelinde incelendiğinde, finansman açıklarının ve kamu harcamalarının yükselmesinin ekonomik istikrarsızlık için potansiyel riskler teşkil ettiği görülmektedir. Wagner Yasası ekonomik büyümenin kamu harcamalarını artıracaklarını ileri sürerken, Keynes Yasası kamu harcamalarının artışının ekonomik büyümeyi destekleyeceğini savunur. Bu iki teorik çerçeve, Türkiye ekonomisinin analizinde önemli birer kavram olarak dikkat çekmektedir.

1980'lerden sonra uygulanan ekonomik politikalar ve özelleştirme girişimleri, kamu harcamaları ile milli gelir arasındaki ilişkinin doğasını değiştirmiştir. Gelişmiş ülkelerde kamu harcamalarının GSYİH içindeki payının artmasına karşın, gelişmekte olan ülkelere bu oran düşük kalmıştır. Bu eğilim, kamu harcamaları ile ulusal gelir arasındaki etkileşimin anlaşılması ve yönetilmesi konusunda yeni tartışmalara sebep olmuştur. Türkiye ekonomisinde, kamu harcamalarının yönetimi ve kapsamı, ekonomik büyüme üzerinde belirleyici ve kritik bir etkiye sahiptir.

Kalkınma ve büyüme kavramları sıkça bir arada kullanılmasına rağmen, kalkınma, niceliksel büyümenin yanı sıra toplumsal refah ve yaşam kalitesindeki niteliksel gelişmeleri de kapsar. Bu nedenle, ekonomik büyüme sürecinde kamu harcamaları, hem bir sonuç hem de bir itici güç olarak değerlendirilmeli ve bu alanda stratejik politikalar benimsenmelidir. Kamu harcamaları, ekonomik büyüme süreçlerinin anlaşılması ve etkin bir şekilde yönlendirilmesinde vazgeçilmez bir araçtır ve Türkiye ekonomisinin geleceği üzerinde önemli etkiler yaratmaktadır.

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## ANALYSIS OF ANTIOXIDANT AND REDUCING POWER ACTIVITIES IN BUTANOL EXTRACT FROM HEDYSARUM

Kenza Hazine<sup>1</sup>, Chaima Mouffouk<sup>1,2</sup>, Soumia Mouffouk<sup>1</sup>, Hamada Haba .

<sup>1</sup>Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria ., Algérie

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaïd, 05000 Batna, Algeria

[kenza.hazine@univ-batna](mailto:kenza.hazine@univ-batna).

### Abstract

HEDYSARUM is a genus of medicinal plants known for its therapeutic properties and has long been used in traditional medicine. In this study, the antioxidant and reducing power activities of the n-butanol extract from HEDYSARUM were evaluated. The n-butanol extract demonstrated strong antioxidant activity, particularly in scavenging DPPH free radicals. The IC<sub>50</sub> value for DPPH radical scavenging was found to be  $19.88 \pm 0.11$  µg/mL, indicating significant potential for this extract in neutralizing free radicals. Furthermore, the reducing power assay confirmed that the extract contains compounds capable of reducing Fe<sup>3+</sup> to Fe<sup>2+</sup>, suggesting its effectiveness as a reducing agent. These results underscore the promising bioactivity of the n-butanol extract from HEDYSARUM as a potent free radical scavenger and reducing agent, highlighting its potential use in developing natural antioxidant therapies. This study provides valuable insights into the chemical composition and antioxidant efficacy of HEDYSARUM, supporting its potential application in pharmaceutical and nutraceutical fields, particularly in combating oxidative stress and related diseases.

**Keywords:** HEDYSARUM plant, n-butanol extract, DPPH, free radical scavenging, reducing power, IC<sub>50</sub>, antioxidant activity, medicinal plants.

## DPPH FREE RADICAL SCAVENGING ACTIVITY OF PETROLEUM ETHER, ETHYL ACETATE, AND N-BUTANOL EXTRACTS FROM HEDYSARUM PLANT

Kenza Hazine<sup>1</sup>, Chaima Mouffouk<sup>1,2</sup>, Soumia Mouffouk<sup>1</sup>, Hamada Haba<sup>1</sup>.

<sup>1</sup>Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria., Algérie

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaïd, 05000 Batna, Algeria

[kenza.hazine@univ-batna](mailto:kenza.hazine@univ-batna).

### Abstract

This study investigates the DPPH free radical scavenging activity of three distinct extracts from HEDYSARUM plant: petroleum ether, ethyl acetate (EtOAc), and n-butanol (n-BuOH). The plant powder (950g) was macerated twice using a mixture of ethanol and water (70/30) at room temperature for 72 hours each time. After filtration, the filtrate was concentrated and subjected to liquid-liquid fractionation using organic solvents, resulting in petroleum ether (5.4g), ethyl acetate (3.65g), and n-butanol (15.2g) extracts. The DPPH free radical scavenging activity of each extract was evaluated, and the IC<sub>50</sub> values were determined. The petroleum ether extract exhibited an IC<sub>50</sub> value of 23.89 µg/mL, the ethyl acetate extract showed the highest antioxidant potential with an IC<sub>50</sub> value of 19.90 µg/mL, and the n-butanol extract displayed an IC<sub>50</sub> value of 28.77 µg/mL. These findings suggest that all three extracts possess significant antioxidant activity, with ethyl acetate demonstrating the strongest DPPH free radical scavenging effects. This study highlights the potential of HEDYSARUM extracts, particularly the ethyl acetate extract, as a valuable source of natural antioxidants for potential therapeutic applications.

**Keyword:**HEDYSARUM plant, petroleum ether extract, ethyl acetate extract, n-butanol extract, DPPH, free radical scavenging, IC<sub>50</sub>, antioxidant activity, medicinal plants.

## FOOD AND NUTRITION: ESSENTIAL FACTORS IN PUBLIC HEALTH AND THE CHALLENGE OF MALNUTRITION

Gjylai ALIJA<sup>1\*</sup>, Merita DAUTI<sup>1</sup>, Drita YZEIRI-HAVZIU<sup>1</sup>, Arlinda HAXHIU-ZAJMI<sup>1</sup>, Sihana AHEMTI-LIKA<sup>1</sup>, Lulzime BALLAZHI<sup>1</sup>, Edita ALILI-IDRIZI<sup>1</sup>,

<sup>1\*,1</sup>Department of Pharmacy, Faculty of Medical Sciences, State University of Tetova, Tetova R. N. M.

\*Corresponding Author: e-mail: gjylai.alija@unite.edu.mk

### Abstract

**Background:** Nutrition is a cornerstone of public health, directly impacting individual health, economic productivity, and societal well-being. Malnutrition, encompassing both undernutrition and overnutrition, remains a major global concern. Undernutrition, driven by insufficient intake of essential macronutrients and micronutrients, leads to stunted growth, weakened immunity, and increased susceptibility to infections. In contrast, overnutrition—characterized by the overconsumption of energy-dense, nutrient-poor foods—has led to a global rise in obesity and other diseases.

**Methodology:** This study involves a comprehensive review of literature focusing on the food, nutrition and malnutrition as well as was done to determine the extent of the problem, causes, health consequences, and what can be done about it. Emphasis was placed on evidence-based approaches for improving nutrition outcomes, including dietary education, food system reform, and public health interventions.

**Conclusion:** Addressing malnutrition requires a multifaceted approach that includes promoting balanced, nutrient-rich diets, strengthening food systems, and implementing effective health policies. Achieving sustainable progress in combating malnutrition demands global collaboration, targeted investments, and integrated health and nutrition strategies to ensure equitable access to nutritious food for all.

**Keywords:** food, nutrition, public health, malnutrition

### Introduction

Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity. A healthy individual is one whose bodily systems function properly, whose immune system is strong, and who is capable of resisting disease. The foundation of maintaining good health lies in proper nutrition, as it provides the body with the essential nutrients needed for growth, development, and optimal functioning. Nutrition and food intake directly impact the physiological functions of the body and play a critical role in both preventing and managing disease.

### Anatomy and Physiology: The Foundation of Health

Anatomy is the study of the structure and form of living organisms, focusing on the body's organs, tissues, and cells, each of which serves specific functions crucial for sustaining life. The human body consists of multiple interconnected systems, including the circulatory, respiratory, digestive, and immune systems, all of which depend on proper nutrition to function optimally. For instance, the digestive system processes the food we eat, extracting vital nutrients that are then absorbed into the bloodstream and transported to various organs to maintain health.

Physiology, in turn, deals with the functions of these organs and systems, explaining how their coordinated activities support the body's vital functions, such as growth, repair, and energy production. Nutritional deficiencies or imbalances can interfere with these physiological processes, leading to disorders that may affect the body's ability to function efficiently. Many of these issues are diet-related and can result from either insufficient intake of essential nutrients or improper utilization of these nutrients by the body (Agugo, 2017; Alex, 2020).

### **Pathology and Nutrition: The Link Between Disease and Diet**

Pathology focuses on the study and diagnosis of diseases, often through the examination of tissues, organs, and body fluids. It plays a crucial role in understanding the underlying causes of health conditions. Many diseases, particularly chronic conditions such as diabetes, heart disease, and malnutrition-related disorders, are linked to poor dietary habits. The imbalance of nutrients or the lack of specific nutrients in the diet can contribute to the development of diseases, highlighting the critical role of nutrition in both disease prevention and management.

### **The Role of Nutrition in Maintaining Health**

Nutrition is essential for maintaining the body's metabolic functions and ensuring overall well-being. A well-balanced diet, rich in essential nutrients, supports the body's immune system, promotes growth, and helps the body resist infections (figure 1). Nutrition provides the body with energy, facilitates cell repair and regeneration, and plays a pivotal role in hormonal balance and metabolic processes. There are seven vital nutrients that the human body needs: proteins, fats, carbohydrates, vitamins, minerals, fiber, and water. Each nutrient plays a specific role in maintaining the body's functions. For example:

- Proteins are essential for cell growth, repair, and tissue maintenance.
- Fats provide energy and help absorb fat-soluble vitamins.
- Carbohydrates are the primary energy source for the body.
- Vitamins and minerals are involved in numerous biochemical reactions, immune support, and the maintenance of healthy skin, eyes, and bones.
- Fiber aids in digestion and supports heart health.

- Water is essential for hydration, digestion, and the transportation of nutrients.

A diet lacking in any of these nutrients can lead to deficiencies, resulting in a variety of health issues.



**Figure 1.** Nutrition and Good nutrition

### **Good Nutrition: Essential for Health and Well-Being**

Good nutrition is fundamental to maintaining health, promoting growth, and ensuring proper body function. It involves receiving an adequate supply of both macronutrients (proteins, carbohydrates, fats, and water) and micronutrients (vitamins and minerals).

These nutrients are essential for the body to grow, maintain optimal health, and function effectively. Proper nutrition is not only necessary for sustaining life but also plays a key role in preventing diseases and promoting overall well-being.

Understanding how these nutrients work together in the body can help individuals create a balanced diet that supports their health goals (figure 1) (Maurice et al., 1999; Schlenker & Gilbert, 2015; Alija et al. 2024).

### **Nutrition as a Science**

Nutrition is the science that studies the composition of food, the nutrients it contains, and their impact on the health and physical well-being of individuals. It defines the principles of healthy eating, both in people who are healthy and those who are sick. The field examines the chemical composition of the body, the role of various food substances in metabolism, the digestion and absorption of food, and the consequences of both rational and irrational dietary practices.

Nutrition is fundamentally a combination of catabolism (the breakdown of nutrients) and anabolism (the synthesis of body components), which involves physiological reactions between food components, cells, organs, and the body's systems (Ruth, 2011).

### **The Importance of Good Nutrition Practice**

Good nutrition practice forms the foundation for maintaining optimum health. It involves adhering to the principles of nutrition in food choices, meal planning, food preparation, and consumption. A healthy nutritional



status can be maintained only when a balanced diet is consumed, containing all the necessary nutrients in the correct proportions.

Nutrients are substances found in food that drive biological activity and are essential for the human body. They are typically classified into two categories: macronutrients and micronutrients (figure 2).



**Figur 2.** Good nutrition practice

### **Macronutrients: The Body's Primary Energy Sources**

Macronutrients are required in large quantities because they provide energy and are essential for maintaining body functions. The three main macronutrients are:

**Proteins:** Proteins are formed by the combination of amino acids linked by peptide bonds, creating protein chains. Proteins play critical roles in body building, tissue repair and maintenance, and the regulation of osmotic pressure. Additionally, proteins are involved in the synthesis of bioactive substances and other vital molecules. The human body contains nearly twenty amino acids, ten of which are essential and must be obtained through diet, as the body cannot synthesize them. Protein requirements should account for 10–15% of total daily energy intake, with approximately 0.75g of protein needed per kilogram of body weight.

Proteins are vital for the repair of muscles, skin, and other tissues, as well as for maintaining body fluid balance, fighting infection, and transporting oxygen through the bloodstream. Rich sources of protein include red meat, poultry, dairy products, eggs, beans, nuts, and certain fish like salmon and halibut (figure 3) (Ruth, 2011; Sekovska, 2020).

### **Carbohydrates: The Body's Primary Energy Source**

Carbohydrates are the primary source of energy for daily physical activity. They are the most affordable, widely available, and easily digestible type of nutrition, with starches being the most common form. Carbohydrates are found in large quantities in plants and are often referred to as "energy foods" due to their ability to provide quick energy.

Carbohydrates are classified based on the number of saccharide (sugar) groups present. They can be roughly divided into two categories: simple carbohydrates and complex carbohydrates.

- Simple carbohydrates consist of monosaccharides (single sugars) and disaccharides (double sugars). These sugars are quickly absorbed and used for energy. Common examples of simple carbohydrates include glucose, fructose, and sucrose.
- Complex carbohydrates include fibers, starches, and certain types of glucose. They are more complex in structure and take longer to digest. Major sources of complex carbohydrates include cereals, millet, tubers, pulses, and some fruits.

Carbohydrates help regulate blood glucose levels, providing a steady source of energy. They also play a role in preventing ketosis, which occurs when the body breaks down fats for energy in the absence of carbohydrates. Additionally, carbohydrates are involved in the synthesis of essential macromolecules, such as RNA, DNA, and ATP, and provide structural components necessary for cell formation (figure 3).



**Figure 3.** Protein and carbohydrate rich food

### **Fiber: An Essential Component of the Diet**

Fiber, previously defined as "plant polysaccharides and lignin that resist hydrolysis by human digestive enzymes," plays an important role in the diet. This definition also includes resistant starch, which is a type of fiber that resists digestion in the small intestine. Dietary fiber is typically classified by its solubility in water, which influences its physiological effects in the body. Fiber is primarily composed of cellulose and hemicelluloses, with cellulose being the majority of insoluble fiber. Insoluble fiber is found in foods like whole

grains, wheat bran, and vegetables. Lignin, a polyphenolic substance not classified as a carbohydrate, is also part of insoluble fiber.

The soluble fiber component, which includes pectin,  $\beta$ -glucans, and mucilages, has specific physiological effects that are beneficial for health. These fibers are more likely to dissolve in water and have been shown to contribute to various health benefits, such as promoting laxation, lowering blood cholesterol, and regulating blood glucose levels.

The benefits of dietary fiber are widespread. For example, soluble fiber helps reduce the risk of cardiovascular diseases by lowering LDL (bad) cholesterol, and it can aid in the management of type 2 diabetes by stabilizing blood sugar levels. Insoluble fiber, on the other hand, aids digestion and helps prevent constipation.

### **Fats: Essential for Energy and Health**

Fats play a vital role in maintaining overall health and are an important component of a balanced diet. They act as a storehouse for energy, storing excess calories that the body can use when needed. When the body requires energy, fat is broken down and converted into a usable form, supplying a long-lasting and efficient source of fuel. In addition to providing energy, fats help regulate feelings of satiety, promoting a sense of fullness and helping to prevent overeating.

Not all foods contain fat in significant amounts. While most fruits and vegetables have little to no fat, other foods such as meats (e.g., beef), nuts, oils, and butter are rich in fat. Fat is a diverse group of substances collectively known as **lipids**, which are found in both plant and animal tissues. One defining characteristic of lipids is their solubility in organic solvents such as ether, chloroform, and benzene, while they are generally insoluble in water.

Each gram of fat provides the body with 9 kcal of energy, making it the most energy-dense nutrient. Beyond its role in energy production, fat is essential for several physiological functions:

1. **Vitamin Absorption:** Fat aids in the absorption of fat-soluble vitamins (A, D, E, and K), which are crucial for various body functions.
2. **Protection of Organs:** Fat acts as a cushion around vital organs, helping to protect them from mechanical damage.
3. **Cell Structure and Function:** Fats are structural components of cell membranes and are involved in the synthesis of important signaling molecules that regulate cellular communication and functions.
4. **Insulation and Temperature Regulation:** Fat provides insulation to vital organs and helps maintain body temperature by acting as a thermal insulator.

While fat is necessary for these vital functions, it is important to consume it in moderation, focusing on healthy fat sources like unsaturated fats found in plant-based oils, avocados, and nuts, rather than excessive amounts of saturated or trans fats, which may contribute to health problems (figure 4) (Peggy et al., 2010).



**Figure 4.** High fat and fibre foods

### Micronutrients: Essential for Health in Small Quantities

Micronutrients, although required in smaller quantities compared to macronutrients, are vital for maintaining health and supporting various body functions. These nutrients include vitamins and minerals, which are essential for optimal health and well-being.

**Vitamins** are organic compounds that the body needs in small amounts to perform specific metabolic functions, prevent deficiency diseases, and support overall health. The term “vital amines” was originally used because these compounds contain an amine functional group, but it is now understood that vitamins are not synthesized by the body and must be obtained from food sources.

Vitamins are divided into two groups based on their solubility:

1. Fat-soluble vitamins: These include Vitamins A, D, E, and K. Fat-soluble vitamins are absorbed with dietary fats and stored in the body’s fat tissues and liver. They can be excreted through the kidneys when taken in excess.
2. Water-soluble vitamins: These include Vitamin C, B vitamins (such as B12, B6, riboflavin, niacin, folate, and thiamine). Water-soluble vitamins are absorbed directly into the bloodstream and are not stored in the body, so they must be replenished regularly through diet.

Vitamins are crucial for numerous bodily functions:

- Metabolic function: They support energy production and help in the breakdown of nutrients.

- Immune system support: Vitamins such as Vitamin C and D play a key role in defending the body against infections.
- Bone and teeth health: Vitamins like A and D are essential for the growth and maintenance of bones and teeth.
- Antioxidant activity: Many vitamins, including Vitamin C and Vitamin E, act as antioxidants, neutralizing free radicals that can damage cells and tissues.
- Nerve function and skin health: Several vitamins are vital for maintaining healthy nerves, skin, and mucous membranes (Ruth, 2011; John et al., 2004).

**Minerals** are inorganic substances that are essential for various body functions. They play a crucial role in forming bones, tissues, teeth, muscles, and nerves. Minerals are also involved in the formation of vital body fluids like blood and contribute to the proper functioning of the cardiovascular, nervous, and muscular systems. Minerals are required for maintaining cellular function, regulating muscle tone, and supporting healthy metabolic processes. They are typically classified into two categories:

1. Macrominerals (Major Minerals): These are required in larger amounts.

Examples include:

- Calcium: Important for bone and teeth health.
- Phosphorus: Supports bone and cell structure.
- Magnesium: Involved in muscle and nerve function.
- Sodium and Chloride: Essential for fluid balance and nerve function.
- Sulfur: Important for protein synthesis.
- Potassium: Helps in maintaining proper cell function and fluid balance.

2. Microminerals (Trace Minerals): These are needed in smaller amounts but are equally important for health.

Examples include:

- Iron: Crucial for oxygen transport in the blood.
- Zinc: Supports immune function and wound healing.
- Copper: Important for red blood cell formation and iron absorption.
- Iodine: Essential for thyroid function.
- Manganese, Fluoride, Chromium, Selenium, and Molybdenum: Support various enzymatic functions and metabolic processes (Figure 5).

In summary, both vitamins and minerals play integral roles in maintaining a healthy body, supporting processes from immune defense to the formation of critical tissues and organs. Ensuring adequate intake of these micronutrients through a balanced diet is essential for optimal health and preventing deficiencies.



## Water: Essential for Hydration and Health

Water is a crucial component of the human body, essential for various physiological functions. It acts as a transport medium, delivering nutrients to all parts of the body and removing waste products for disposal. In addition to its role in nutrient and waste transport, water helps maintain body temperature and supports a wide range of bodily functions.

On average, an adult human requires about 2 liters of water per day to stay properly hydrated. Water is involved in forming digestive juices, serving as the primary component of blood, urine, and sweat. It also plays a vital role in temperature regulation by helping to cool the body through sweating, and it helps to reduce the risk of conditions like cystitis.

Water is also essential for:

- **Cell Health:** It is a key player in maintaining cell function and overall health.
- **Joint Lubrication:** Water helps cushion the joints, preventing friction and reducing the risk of joint damage.
- **Bladder Health:** Adequate water intake supports the urinary system by flushing out toxins and keeping the bladder free from harmful bacteria.
- **Skin Health:** Hydrated skin remains more elastic, smooth, and resilient to damage.

In summary, water is a fundamental nutrient that supports hydration, aids in bodily functions, and helps maintain the health of various systems, from digestion to cellular function and joint mobility (figure 5).



Figure 5. Vitamins, Minerals and Water –rich food

## The Impact of Instant Foods on Health

Despite the importance of water and a balanced diet, the rise in instant food consumption has led to a reduction in the demand for nutritious, whole foods. The convenience and accessibility of fast food and processed meals

may be contributing to poor health outcomes. Regular consumption of low-nutrient, high-calorie foods can result in malnutrition, obesity, and other chronic health issues.

It's crucial to recognize the importance of nutritious, whole foods and maintain healthy eating habits to prevent long-term health problems. Choosing foods that are rich in essential nutrients, including water-rich fruits and vegetables, can significantly improve overall health and well-being.

### **Diet and Its Role in Health**

A **diet** refers to the food and drinks consumed daily, which are essential for maintaining health and sustaining life. The **adequate diet** is a combination of various foods and nutrients that fulfill the body's nutritional needs, particularly the essential nutrients. Achieving an adequate diet involves eating a wide variety of foods, which ensures that the body receives the necessary nutrients for growth, repair, and optimal functioning.

An **adequate diet** does more than just sustain life; it plays a critical role in influencing the onset and manifestation of diseases. However, diet alone does not prevent disease. Other factors, such as genetics, lifestyle, and environmental influences, also contribute to an individual's health (Maurice et al., 1999; Waugh, 2010; Alija et al. 2024).

#### 1) Balanced Diet: Foundation of Good Health

A **balanced diet** is one that provides a variety of foods in the correct proportions to meet the body's daily nutrient requirements. It includes the right amounts of **proteins, carbohydrates, fats, vitamins, minerals, water, and fiber**. This type of diet is essential for promoting and preserving good health, as it ensures that the body receives all the necessary nutrients to function properly.

In addition to maintaining good health, a balanced diet provides a **safety margin** or a reserve of nutrients that can help the body withstand short-term periods of nutritional deprivation. For instance, during a brief period of fasting or if certain nutrients are temporarily lacking in the diet, the body can rely on these reserves.

To achieve a balanced diet, it is important that the food intake meets the

**Recommended Dietary Allowances (RDAs)**, which account for daily nutrient requirements along with an added safety margin. The RDAs are formulated to ensure that individuals get enough nutrients to prevent deficiencies, even when nutrient intake may fluctuate over time.

## Recommended Dietary Allowances = Nutrient Requirements + Safety Margin

### 2) The Importance of Nutrition in Health

Understanding the importance of a balanced diet is essential for overall health. Nutrition plays a key role in **fending off chronic illnesses** and maintaining physical and mental energy. A diet rich in essential nutrients, such as vitamins, minerals, proteins, and carbohydrates, supports the body's normal functions and boosts both physical vitality and mental well-being (figure 6) (Swaminathan & Rajagopal, 2007; Schlenker & Gilbert, 2005).



**Figur 6.** Balance diet

### Malnutrition: Definition and Impact on Health

According to the World Health Organization (WHO), malnutrition refers to a state of cellular imbalance that arises when there is a mismatch between the body's supply of nutrients and energy and the physical demands for these components. This imbalance can impair the body's ability to grow and maintain proper functioning, leading to compromised health. As a result, malnutrition increases the risk of various health conditions and diseases (Mann & Truswell, 2002; Agugo, 2017).

### Nutrient Cycle and Energy Flow

The nutrient cycle is a biogeochemical process that involves the movement of inorganic matter through soil, organisms, air, or water, where it is transformed into organic matter. In contrast, energy flow follows a unidirectional, noncyclic pathway, while the movement of mineral nutrients remains cyclic. A disruption in nutrient cycling can affect oxygen levels, climate, and the overall function of ecosystems.

## Types of Malnutrition

Malnutrition, as defined by WHO, is a pathological condition resulting from either a deficiency or an excess of one or more essential nutrients. It is typically detected through biochemical, anthropometric, or physiological tests. Malnutrition can be classified into two broad categories:

1. **Undernutrition:** This includes:
  - Wasting: Low weight-for-height.
  - Stunting: Low height-for-age.
  - Underweight: Low weight-for-age.
  - Deficiencies in vitamins and minerals: Lack of essential micronutrients.
2. **Overnutrition** This includes:
  - Obesity and overweight: Excessive intake of calories, leading to weight gain.
  - Diet-related non-communicable diseases: Such as heart disease and diabetes.

## Assessment of Malnutrition

There are several methods for assessing the nutritional status of individuals or communities, including:

1. **Clinical Examination:** This method focuses on detecting changes in the surface tissues of the body (skin, eyes, hair, and mucosa) that are associated with poor nutrition.
2. **Biophysical Methods:** These evaluate changes in bodily functions linked to inadequate nutrition.
3. **Anthropometric Measurements:** These are used to assess variations in body dimensions and composition at different life stages and dietary patterns. Basic measurements include:
  - Weight (kg)
  - Length/height (cm)
  - Arm circumference (cm)
  - For small children, head and chest circumference are also measured (Waugh, 2010; Maurice et al., 1999; Boer, 2022).

## Prevalence of Malnutrition

Studies show that malnutrition remains a significant public health issue globally. According to a study by Matthias P. and co-authors, approximately 25% of patients in German hospitals are malnourished. Malnutrition is associated with longer hospital stays and is more common in elderly patients, those with malignancies, and individuals with major comorbidities. Providing adequate nutritional support is crucial to improving clinical outcomes for these patients.

In regions like Southern Asia and Sub-Saharan Africa, malnutrition is a persistent issue, often resulting from diets that are deficient in macronutrients (proteins, carbohydrates, fats) and micronutrients (electrolytes, vitamins, and minerals). These deficiencies can lead to protein-energy malnutrition and specific micronutrient deficiencies, which exacerbate health problems.

### **Impact of Malnutrition on Disease and Health**

Malnutrition significantly increases an individual's susceptibility to infections and can exacerbate the severity of illnesses, making it a major contributor to both morbidity and mortality worldwide.

#### 3) Undernutrition: Causes and Consequences

**Undernutrition** refers to a deficiency of essential nutrients, which can occur when an individual does not consume an adequate diet or when the body struggles to absorb sufficient nutrients from food. This condition can manifest visibly, with fat and muscle wasting, or remain hidden, affecting the body at a cellular level. Undernutrition can be caused by **protein-energy wasting or micronutrient deficiencies**, leading to a variety of health issues.

Undernutrition significantly impacts both physical and mental functioning, causing changes in body composition and body cell mass. It is a major global health problem, especially for children under the age of 5, where it contributes to the highest mortality rates. The long-term physiological effects of undernutrition can be devastating.

Undernutrition manifests in several ways, including:

- **Stunting:** Low height-for-age.
- **Wasting:** Low weight-for-height.
- **Underweight:** Low weight-for-age.

Extreme cases of undernutrition can lead to severe conditions such as **starvation, chronic hunger, Severe Acute Malnutrition (SAM)**, and **Moderate Acute Malnutrition (MAM)** (Marshak et al., 2021).

#### a) Micronutrient Deficiencies

The signs and symptoms of undernutrition depend on the specific micronutrient deficiencies present. Common deficiencies include:

- **Vitamin A deficiency:** Can lead to vision problems and immune system weakness.
- **Iron deficiency:** Causes anemia and weakness.
- **Iodine deficiency:** Affects thyroid function and can lead to developmental issues.

Undernourished individuals are also more susceptible to infections and may frequently feel cold.



Ken M.'s study in **Malawi** highlights protein-energy undernutrition and addresses the public health significance of specific micronutrient deficiencies like vitamin A, iron, and iodine.

In the study by Wubishet (2022) is shown Malnutrition and poor oral hygiene found to be ingrained in the pathogenesis of noma. For effective management and prevention of noma, it is necessary to underpin adequate nutritional supplementation (including vitamins). As a primary prevention strategy, healthcare workers' training should be strengthened to improve the diagnosis and treatment of oral infections, including noma.

#### 4) Overnutrition: Causes and Consequences

**Overnutrition** is a form of malnutrition characterized by the excessive intake of nutrients, particularly energy-dense foods and drinks, along with limited physical activity. It leads to **overweight** (BMI of 25 or more) and **obesity** (BMI of 30 or more). Overnutrition has become a major global health issue, especially as it is linked to numerous **non-communicable diseases (NCDs)** such as:

- **Diabetes**
- **Cardiovascular diseases**
- **Certain cancers**
- **Musculoskeletal disorders**
- **Respiratory diseases**
- **Work disability**

The **World Health Organization (WHO)** now includes overnutrition in its definition of malnutrition to recognize the harmful health effects of excessive nutrient consumption, including overweight, obesity, and nutrient toxicity due to overdosing on specific micronutrients.

Excessive energy intake from:

- **Dietary fats**
- **Carbohydrates (especially sugars and fibers)**
- **Alcoholic beverages**

...all contribute to overweight and obesity, which increase the risk of chronic diseases. Thus, overnutrition is a significant risk factor for various health complications, leading to an increased burden on health systems globally.

#### a) Assessment of Overnutrition

Researchers such as **Seidell, J.C. & Visscher, T.L.S.** have highlighted the importance of assessing overnutrition through anthropometric classification, including measurements for **overweight** and **abdominal**

**obesity.** These assessments are critical for understanding the relationship between excessive energy intake and obesity. Obesity serves as a determinant of mortality and morbidity, particularly in individuals with:

- **Cardiovascular diseases**
- **Type 2 diabetes mellitus**
- **Neoplasms (cancers)**
- **Musculoskeletal disorders**
- **Respiratory diseases**

Addressing overnutrition has become a health priority to reduce the risk of these chronic diseases and improve quality of life globally (figure 7) (Swaminathan & Rajagopal, 2007; Stanfield & Hui, 2010; Jeremy et al., 2023).



**Figure 7.** Undernutrition and Overnutrition

## 5) Conclusions

Nutrition plays a fundamental role in the overall health of the body. Food is essential for survival as it provides the necessary resources for the body to function properly and maintain good health. Key nutrients, such as **protein**, **carbohydrates**, and **fats**, are known as **macronutrients**. These substances not only supply the body with energy for growth, development, and maintenance but also support specialized functions that sustain overall health. In addition to macronutrients, food contains **micronutrients** (such as **vitamins** and **minerals**) and **phytochemicals**, which are essential for the body to operate at its optimal level. To ensure good health and maintain a proper nutritional status, it is crucial to consume a balanced diet that includes all necessary nutrients in the correct proportions.

A **balanced diet** and good **nutrition** are key to leading a healthy life and preventing the onset of diseases. It is particularly recommended to include foods rich in **vitamins** and **minerals** for optimal health.

**Malnutrition** is a pathological condition that results from a deficiency or excess of one or more essential nutrients, and it can be detected through biochemical, anthropometric, or physiological tests. It is primarily

categorized into **undernutrition** and **overnutrition**, both of which are often observed in chronic and severe diseases, affecting the body's overall outcome.

In conclusion, achieving proper nutrition through a balanced diet is critical for preventing malnutrition and supporting the body's ability to function and thrive.

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## ANTIBIOTIC USE IN DAIRY CATTLE FARMING: RISKS AND PRACTICES IN SOUK AHRAS REGION

**GANAOUI MAROUA<sup>1</sup>, GANAOUINAWEL<sup>2</sup>, BOUZID R<sup>1</sup>, KHELEF D<sup>3</sup>**

ORCID: <https://orcid.org/my-orcid?orcid=0009-0002-8457-0854>

[mar.gritegirl@gmail.com](mailto:mar.gritegirl@gmail.com), [ganaoui.nawel@gmail.com](mailto:ganaoui.nawel@gmail.com), [djamelkhelef@yahoo.fr](mailto:djamelkhelef@yahoo.fr)

<sup>1</sup>lab: Epidemiological surveillance, health, production and reproduction, experimentation and cellular therapy of domestic and wild animals. Chadli Ben Djedid El-tarf University. <sup>2</sup>Ibn Khaldoun Tiaret

University

<sup>3</sup>National Higher Veterinary School

### ABSTRACT

Veterinary treatments, primarily antibiotics used for therapeutic or prophylactic purposes in dairy cows, are a significant source of antibiotic residues in milk. The presence of residues exceeding authorized limits is a recognized concern in milk and dairy products today.

This study involved a questionnaire survey targeting 10 practicing veterinarians to gather their perspectives on antibiotic use in dairy cattle farming. Results revealed that 65% of veterinarians consistently work in dairy cattle operations. Antibiotics are widely used, with Penicillin (98%) and Oxytetracycline (85%) being the most common choices. However, a notable 95% of antibiotics used are not aligned with the authorized market specifications.

The survey highlighted issues such as non-compliance with prescribed doses and withdrawal periods, exacerbating the risk of antibiotic residues in milk. This poses a significant challenge to public health and food safety.

**Keywords:** Antibiotics, Antibiotic Therapy, Veterinarians, Dairy Cattle.



**BIOSINT PROJECT: THE INTERNATIONALIZATION OF EXISTING COURSES.**

**Neda Hysenaj<sup>1</sup>, Edit Xhajanka<sup>1</sup>, Marsela Fagu<sup>1</sup>, Sara Vasku<sup>1</sup>, Inva Idrizi<sup>1</sup>, Dea Bejko<sup>1</sup>, Aurora Mema<sup>1</sup>,  
Sindi Asqeri<sup>1</sup>**

**<sup>1</sup> Faculty of Dental Medicine, University of Medicine, Tirana, Albania**

**Abstract**

One of the main goals of the BIOSINT project, with the title: "Strengthening capacities and digital competences in biomedical education through internationalization at home," (BIOSINT), Erasmus plus project, co-funded by the European Union with the University of Kragujevac as coordinators, is the internationalization of the existing curricula, which more concretely means the incorporation of international and intercultural elements in the existing syllabuses. It is important for the students to gain the necessary knowledge to face an international environment in the future. Through this process, the intercultural skills of the students will also be increased. For this purpose, the Faculty of Dental Medicine, University of Medicine, Tirana as a partner institution, has internationalized 4 syllabuses: the Master of Science in Dentistry the subjects: Fixed Prosthodontics, Year III, Total Removable Dentures, Year V; for the Dental Technician program, the subjects: Fixed Prosthodontics, Year III, Total Removable Dentures, Year III. This constitutes the Deliverable 4.2: Internationalize existing courses. The main benefits of the internationalization of the curricula include the increased reputation of the Faculty, the increased possibility for cooperation with international institutions, and the modernization of the syllabus content with the latest achievements of the proper field.

**Keywords:** Internationalization, existing curricula, BIOSINT project.

## PARKİNSON HASTALIĞINDA ZİHİN-VÜCUT BAĞLANTISI

**Khaoula Elcadi<sup>1</sup>, Pr.Najib kissani<sup>2</sup>**

**Marrakeş Cadi Ayyad Üniversitesi, Tıp ve Eczacılık Fakültesi, Klinik, Deneysel ve Çevresel Nörobilim Laboratuvarı<sup>1</sup>, k.elcadi.ced@uca.ac.ma, 0009-0006-3153-9318**

**Nöroloji, Mohammed VI Üniversitesi Tıp Merkezi, Marakeş<sup>2</sup>, najibkis@gmail.com**

### Özet

Anksiyete bozuklukları, Parkinson hastalığında daha yaygındır ve bu bozuklukların anlamı karmaşık ve anlaşılması zor olabilir. Bu bozukluklar, hastaların tutumlarını ve davranışlarını etkileyerek hem Parkinson hastalarının hem de çevresindekilerin yaşam kalitesini düşürebilir ve intihar eğilimlerinin artmasına katkıda bulunabilir. Psikanaliz, hastaların psikolojik durumları üzerindeki etkileri nedeniyle yüzyıllardır önemli bir psikoterapi biçimidir. Birçok çalışma, bilişsel-davranışçı terapinin (BDT) hastaların psikolojik yönlerini ele almada önemli bir rol oynadığını göstermiştir. BDT, bireylerin yaşadığı durumları ele almakla kalmaz, aynı zamanda o an hissettikleri duygulara da odaklanır. Hastanın duygusal tepkilerini tespit etmenin yolu, bilişsel-davranışçı terapinin ilkeleridir. Genellikle 6 ile 20 seans arasında sürer. Bu terapinin amacı, Parkinson hastalarında anksiyete bozukluklarını azaltmak, sorunlarına çözümler bulmak ve zorluklarına daha olumlu bir şekilde bakmalarına yardımcı olmaktır. Psikolojide BDT'nin bilimsel bir perspektiften kullanılması, psikoterapistlerin güncel olaylar ve araştırmacılar tarafından geliştirilen yeni yaklaşımlar hakkında bilgi sahibi olmalarını gerektirir; böylece uygulamalarını hastaların ihtiyaçlarına ve bilimsel araştırmalara göre uyarlayabilirler. Terapi sürecinde, terapist ile hasta arasında diyaloglara dayalı tartışmalar kullanılır ve hastaların düşüncelerini yazmalarını teşvik eder. Bu aşama tamamlandıktan sonra, bir sonraki adım, uyumsuz düşünceleri analiz etmek ve bunları daha uygun olanlarla değiştirmek için teknikler kullanmaktır. BDT, hastaların yaşamın pratik engellerini aşmalarına yardımcı olur, günlük alışkanlıklarını etkiler ve onlara güven aşılama hedefler, ve ruh sağlığı sorunlarından bağımsız olarak yaşamlarını takdir etmelerini sağlamak.

**Anahtar kelimeler:** Parkinson hastalığı, anksiyete, BDT.

## THE MIND-BODY CONNECTION IN PARKINSON'S DISEASE

**Khaoula Elcadi <sup>1</sup>, Pr.Najib kissani<sup>2</sup>**

**Clinical, Experimental and Environmental Neuroscience Laboratory, Faculty of Medicine and Pharmacy of Marrakech, Cadi Ayaad University<sup>1</sup>, k.elcadi.ced@uca.ac.ma, 0009-0006-3153-9318**  
**Neurology, Mohammed VI University Medical Center, Marrakech.<sup>2</sup>, najibkis@gmail.com**

### **Abstract**

Anxiety disorders are more common in Parkinson's disease, and their significance is complex and difficult to understand. They can affect the attitudes and behaviors of patients, degrading the quality of life for both Parkinson's patients and those around them, and may contribute to an increase in suicidal tendencies. Psychoanalysis is a form of psychotherapy that has been significant for centuries due to its effects on patients psychological states. Several studies have demonstrated that a specific type of therapy, cognitive-behavioral therapy (CBT), plays an important role in addressing the psychological aspects of patients. CBT not only addresses the situations individuals are experiencing but also focuses on how they feel in those moments. The way to detect a patient's emotional reactions is through the principles of cognitive-behavioral therapy. It typically involves a duration of 6 to 20 sessions. The aim of this therapy is to reduce anxiety disorders in Parkinson's patients, to find solutions to their problems, and to help them view their difficulties in a more positive light. The use of CBT in psychology from a scientific perspective requires that psychotherapists stay informed about current events and new approaches developed by researchers to adapt their practices according to the needs of patients and scientific research. He uses discussions between the therapist and the patient based on dialogue and encourages patients to write down their thoughts as part of the therapeutic process. Once this is completed, the next step involves using techniques to analyze maladaptive thoughts and replace them with more appropriate ones. CBT helps clients overcome the practical obstacles of life, influences their daily habits, and aims to instill confidence in patients, and to appreciate their lives regardless of their mental health issues.

**Keywords: Parkinson disease, anxiety, CBT.**

## PARKINSON HASTALIĞININ BEYİN VE VÜCUT ÜZERİNDEKİ ETKİSİ

**Khaoula Elcadi <sup>1</sup>, Pr.Najib kissani<sup>2</sup>**

**Marrakeş Cadi Ayyad Üniversitesi, Tıp ve Eczacılık Fakültesi, Klinik, Deneysel ve Çevresel Nörobilim Laboratuvarı<sup>1</sup>, k.elcadi.ced@uca.ac.ma, 0009-0006-3153-9318**

**Nöroloji, Mohammed VI Üniversitesi Tıp Merkezi, Marakeş <sup>2</sup>, najibkis@gmail.com**

### Özet

Parkinson hastalığı, dinlenme titremeleri, bradikinezi ve kas sertliği gibi motor semptomlarla karakterizedir. Bu motor semptomların yanı sıra, uyku bozuklukları, bilişsel sorunlar ve birçok Parkinson hastasında yaygın olan anksiyete bozuklukları gibi çeşitli motor dışı semptomlar da gözlemlenmektedir. Örneğin, panik bozuklukları, palpasyonlar, artan kalp hızı ve büyük gruplarda sosyal zorluklar gibi belirli kriterleri karşılayan tekrarlayan panik ataklarla tanımlanır. Birçok hasta aşırı endişe, uyku bozuklukları ve öz kontrol eksikliği de yaşamaktadır. Vazquez ve arkadaşlarının [1] DSM-5 kriterlerine dayanan bir çalışması, 131 Parkinson hastasından 31'inin panik atak yaşadığını, genel popülasyondaki 387 hastadan yalnızca 9'unun anksiyete bozuklukları bulunduğunu göstermiştir. Anksiyete bozukluklarının Parkinson hastalarında depresyon ile ilişkili prevalansını açıklamak amacıyla yürütülen başka bir iyi yapılandırılmış çalışma, psikiyatrik görüşmelerle gerçekleştirilmiştir. Schiffer ve arkadaşlarının [2] çalışması, Parkinson hastalığı olan 16 depresyon hastası ve multipl skleroz (MS) hastalığı olan 20 depresyon hastasını incelemiştir. Sonuçlar dikkat çekicidir: 75 hasta yaygın anksiyete bozukluğu (YAB) kriterlerini karşılamaktadır, oysa multipl skleroz hastalarının yalnızca %10'u bu kriterleri karşılamaktadır. Bu durum, Parkinson hastalarında anksiyete oranının diğer durumlara kıyasla daha yüksek olduğunu göstermektedir. Bu çalışmaya göre, Parkinson hastalığına sahip hastalar arasında anksiyete oranının diğer hastalıklara kıyasla yüksek olduğunu söyleyebiliriz.

[1] A. Vázquez, F. J. Jiménez-Jiménez, P. García-Ruiz ve D. García-Urra, « Parkinson hastalığında "panik ataklar". Levodopa tedavisinin uzun dönem komplikasyonu », Acta Neurol. Scand., cilt 87, sayı 1, s. 14-18, Ocak 1993. [2] R. B. Schiffer, R. Kurlan, A. Rubin ve S. Boer, « Parkinson hastalığında atipik depresyon için kanıt », Am. J. Psychiatry, cilt 145, sayı 8, s. 1020-1022, Ağustos 1988, doi: 10.1176/ajp.145.8.1020.

**Anahtar kelimeler: Parkinson hastalığı, Anksiyete, Depresyon**

## THE IMPACT OF PARKINSON'S DISEASE ON THE BRAIN AND BODY

**Khaoula Elcadi <sup>1</sup>, Pr.Najib kissani<sup>2</sup>**

**Clinical, Experimental and Environmental Neuroscience Laboratory, Faculty of Medicine and Pharmacy of Marrakech, Cadi Ayaad University<sup>1</sup>, k.elcadi.ced@uca.ac.ma, 0009-0006-3153-9318  
Neurology, Mohammed VI University Medical Center, Marrakech.<sup>2</sup>, najibkis@gmail.com**

### **Abstract**

Parkinson's disease is characterized by motor symptoms such as resting tremors, bradykinesia, and muscle rigidity. In addition to these motor symptoms, several non-motor symptoms are noted, including sleep disorders, cognitive issues, and anxiety disorders, which are prevalent among many Parkinson's patients. For instance, panic disorders are marked by recurrent panic attacks, which meet specific criteria, including palpitations, increased heart rate, and social difficulties that arise when patients are in large groups. Many patients also experience excessive worry, sleep disturbances, and a lack of self-control. A study by Vazquez et al. [1], based on DSM-5 criteria, found that 31 out of 131 Parkinson's patients experienced panic attacks, while only 9 patients had anxiety disorders among a cohort of 387 in the general population. Another well-structured study conducted through psychiatric interviews aimed to explain the prevalence of anxiety disorders in Parkinson's patients with depression compared to those with multiple sclerosis. The study by Schiffer et al. [2] examined 16 depressed patients with Parkinson's disease and 20 depressed patients with multiple sclerosis. The results were noteworthy: 75 patients met the criteria for generalized anxiety disorder (GAD), while only 10% of the patients with multiple sclerosis did. According to this study, it can be said that the rate of anxiety is high among patients with Parkinson's disease compared to other conditions.. Although few studies have been conducted on anxiety disorders in Parkinson's disease, they remain non-motor symptoms that have a significant impact on the quality of life of patients.

[1] A. Vázquez, F. J. Jiménez-Jiménez, P. García-Ruiz, et D. García-Urra, « “Panic attacks” in Parkinson’s disease. Long-term complication of levodopa therapy », *Acta Neurol. Scand.*, vol. 87, n° 1, p. 14-18, janv. 1993.[2] R. B. Schiffer, R. Kurlan, A. Rubin, et S. Boer, « Evidence for atypical depression in Parkinson’s disease », *Am. J. Psychiatry*, vol. 145, n° 8, p. 1020-1022, août 1988, doi: 10.1176/ajp.145.8.1020.

**Keywords: Parkinson’s disease, anxiety, depression.**



## NATURAL MODULATION OF THE GUT MICROBIOTA IN PATIENTS WITH FOOD ALLERGIES. IMPACT OF ALERGIPLANT

**Major Gheorghe GIURGIU<sup>1</sup>, Prof dr med Manole COJOCARU<sup>2,3</sup>**

**<sup>1</sup>Deniplant-Aide Sante Medical Center, Biomedicine, Bucharest, Romania**

**[deniplant@gmail.com](mailto:deniplant@gmail.com); Telephone: +40 744 827 881**

**<https://orcid.org/0000-0002-5449-2712>**

**<sup>2</sup>Academy of Romanian Scientists**

**<sup>3</sup>Titu Maiorescu University, Faculty of Medicine, Bucharest, Romania**

**[cojocar.manole@gmail.com](mailto:cojocar.manole@gmail.com); Telephone: +40 723 326 663**

**<https://orcid.org/0000-0002-7192-7490>**

Background Dysbiosis or microbial imbalance, can predispose individuals to allergies, while a balanced gut microbiome, fosters immune tolerance. The immune mechanisms involved in food allergies are complex and little is known about the possible role of the gut microbiota in the aetiopathogenesis of food allergies.

Objective Alergiplant could modulate the immune system through gut microbiota in food allergies. Advancing knowledge of the gut microbiome and its function in modulating the course of food allergies, might result in novel therapeutic strategies.

Materials and methods The evaluation of the patients was based on history and physical examination. We investigated the effect Alergiplant in patients with food allergies.

Results Environmental factors such as urbanisation, pollution, and dietary habits also significantly contribute to food allergies risk. It is not clear whether microbial change in food allergies is an outcome of barrier defect or the cause of barrier dysfunction and inflammation. Manipulation of the gut microbiota as a method for modifying atopy, may be attempted in many ways including avoidance of certain foods, supplementation with probiotics and prebiotics, optimising nutrient intake, minimising stress, antimicrobial therapy, correction and prevention of low stomach acid, and faecal microbiota transplantation.

Conclusion The resident microbiota is important in maintaining structural and functional integrity of the gut and in immune system regulation. There was an increase of the intestinal permeability reported in patients with food allergies and a reduction of the gut microbiome diversity. Modifying gut microbiome by applying Alergiplant during early years may be a preventive and therapeutic option in high risk groups.

Keywords: food allergies, host-microbiome interaction; immune regulation; Alergiplant

## THE THERAPEUTIC EFFECTS OF DENIPLANT NUTRACEUTICALS ON THE GUT MICROBIOME IN PATIENTS WITH PSORIASIS

Major Gheorghe GIURGIU<sup>1</sup>, Prof dr med Manole COJOCARU<sup>2,3</sup>

<sup>1</sup>Deniplant-Aide Sante Medical Center, Biomedicine, Bucharest, Romania

deniplant@gmail.com; Telephone: +40 744 827 881

<https://orcid.org/0000-0002-5449-2712>

<sup>2</sup>Academy of Romanian Scientists

<sup>3</sup>Titu Maiorescu University, Faculty of Medicine, Bucharest, Romania

cojocaru.manole@gmail.com; Telephone: +40 723 326 663

<https://orcid.org/0000-0002-7192-7490>

**Background** A growing body of evidence highlights that intestinal dysbiosis is associated with the development of psoriasis. The gut–skin axis is the novel concept of the interaction between skin diseases and microbiome through inflammatory mediators, metabolites and the intestinal barrier. The gut microbiome affects skin homeostasis through its influence on the signaling pathways that coordinate epidermal differentiation.

The objective of this study was to synthesize current data on the Deniplant natural modulator of the gut microbiome in patients with psoriasis.

**Materials and methods** All studies confirmed the association of psoriasis and gut microbiota dysbiosis. We describe the recent advances regarding the interplay between gut microbiota and the skin. Thus, the microbiome can be considered an effective therapeutical target for treating this disorder.

**Results** This presentation provides a detailed and comprehensive systematic study regarding gut microbiome in patients with psoriasis. These results are supported by clinical observations based on a case serie showing improvement in psoriatic skin lesions after Deniplant natural modulator. It is still not clear whether psoriasis is an effect or a cause of the observed disbalance between beneficial and pathogenic microbes. In this context, the study provides very interesting results, showing significantly greater changes in the gut microbiome of patients with psoriasis treated Deniplant natural modulator

**Conclusion** There is a significant association between alterations in gut microbial composition and psoriasis. Intestinal dysbiosis is a state of imbalanced gut microbiome that eventually has a negative impact on skin function and integrity. Deniplant natural modulator is a potential therapeutic strategy in patients with psoriasis

**Keywords:** dysbiosis, microbiome, psoriasis, gut-skin axis, gut barrier, Deniplant nutraceutical

## ISOLATION AND BIOLOGICAL CHARACTERIZATION OF A COMPOUND FROM HEDYSARUM PLANT WITH CHOLESTEROL-LOWERING ACTIVITY

**Kenza Hazine<sup>1</sup>, Chaima Mouffouk<sup>1,2</sup>, Soumia Mouffouk<sup>1</sup>, Hamada Haba .**

<sup>1</sup>Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria ., Algérie

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaid, 05000 Batna, Algeria

[kenza.hazine@univ-batna](mailto:kenza.hazine@univ-batna).

### Abstract

Hedysarum, a plant belonging to the legume family, has gained attention in the field of medicinal plants due to its diverse therapeutic properties. Traditionally used in various cultures for its medicinal benefits, Hedysarum has been studied for its potential effects on a range of health conditions. Among the bioactive compounds found in this plant, one has been previously identified for its ability to lower cholesterol levels. In this study, we successfully isolated and characterized this compound from Hedysarum, confirming its established cholesterol-lowering effects. Using advanced extraction and purification techniques, we isolated the compound and conducted further analysis to explore its biological activity. The compound demonstrated a significant ability to reduce cholesterol levels, particularly low-density lipoprotein (LDL) cholesterol, commonly referred to as "bad cholesterol." The underlying mechanism is believed to involve the inhibition of cholesterol absorption in the intestines and promoting its excretion. This finding highlights the potential of Hedysarum as a valuable source of bioactive compounds, and the known cholesterol-lowering effects of this compound spark interest in further exploring other compounds within the plant, which may offer additional therapeutic benefits. Further research into the complete phytochemical profile of Hedysarum may uncover more promising natural remedies for cardiovascular health and other conditions, further establishing this plant's medicinal potential.

**Keywords:** Hedysarum, Cholesterol, Bioactive Compound, Lipid Regulation, Natural Medicine.

## ISOLATION AND BIOLOGICAL CHARACTERIZATION OF A COMPOUND FROM LEGUMINOUS PLANT WITH ANTIOXIDANT ENHANCING PROPERTIES

Kenza Hazine<sup>1</sup>, Chaima Mouffouk<sup>1,2</sup>, Soumia Mouffouk<sup>1</sup>, Hamada Haba .

<sup>1</sup>Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria ., Algérie

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaid, 05000 Batna, Algeria

[kenza.hazine@univ-batna](mailto:kenza.hazine@univ-batna).

### Abstract

Antioxidants play a vital role in protecting the body from oxidative stress, which is associated with several chronic diseases such as cardiovascular diseases, cancer, and neurodegenerative disorders. These compounds neutralize harmful free radicals, preventing cellular damage and supporting overall health. In this study, a compound known for its antioxidant-enhancing properties was isolated from a leguminous plant. This compound has previously been recognized for its ability to improve the efficacy of antioxidants by boosting their activity, thus reducing oxidative stress. Using advanced extraction and purification methods, we successfully isolated the compound, confirming its known biological activity. Although the biological effects of this compound have been well-documented in earlier studies, further exploration into its clinical potential, safety, and long-term benefits is necessary. This highlights the potential of leguminous plants as valuable sources of bioactive compounds that can be harnessed for future natural health applications.

**Keywords:** Antioxidants, Oxidative Stress, Leguminous Plants, Bioactive Compound, Natural Remedies.

## ULTRASOUND EXAMINATION IN THE ROUTINE CARE OF NEWBORNS

Nana Jincharadze Professor of European University, Tbilisi, Georgia

### Abstract

**Introduction:** Routine neonatal care includes neonatal prophylaxis, including vaccination against hepatitis B and tuberculosis, screening for congenital hypothyroidism, phenylketonuria, galactosemia, cystic fibrosis, adrenal hyperplasia, congenital biotinidase deficiency, and other genetic diseases in dried heel prick blood samples, screening for congenital heart defects, hearing screening, prophylaxis of hemorrhagic disease of the newborn with intramuscular injection of vitamin K, and protection against gonorrhoeal and chlamydial eye infections with application of erythromycin/tetracycline ointment. The standard of routine care for newborns does not include ultrasound examination for the identification of developmental dysplasia of the hip (DDH), congenital kidney pathology, hydronephrosis, or other anatomical defects, or ultrasound examination of the brain - neurosonography.

The aim of the study was to study the views of pediatricians regarding the appropriateness of ultrasound examination for early detection of diseases in the standard of care for newborns.

**Methods:** Methodological basis of this research is the qualitative research, method of cabinet research (“Desk Research”) and Quantitative, cross-section investigation. Technique of investigation: method of direct interviewing. The instrument of the investigation: questionnaires which contain structured, closed questions and the open question, target group was pediatrician and neonatologists.

**Results:** A random sample of 75 physicians, 37 neonatologists working in maternity hospitals and 28 pediatricians working in primary healthcare institutions, were interviewed. The survey revealed: 7% of neonatologists believe that hip-joint ultrasound should be performed in the maternity hospital before discharge to the hospital, 10% of neonatologists believe that kidney ultrasound should be performed in the maternity hospital before discharge to the hospital, and 83% of neonatologists believe that neurosonoscopy should be performed in the maternity hospital before discharge to the hospital; Pediatricians have different views, namely, 95% believe that hip-joint ultrasound should be performed at 6 weeks of age, 92% believe that kidney ultrasound should be performed in the maternity hospital only if fetal hydronephrosis has been diagnosed antenatally, and 88% believe that neurosonoscopy should be performed routinely in the maternity hospital before discharge...

**Conclusion:** According to pediatricians-neonatologists, neurosonoscopy of newborns is the best, non-invasive, cheap and effective method for early diagnosis of congenital brain malformations.

**Keywords:** Neurosonoscopy, newborn, routine care, prevention.



## JUVENILE DELINQUENCY IN THE WESTERN BALKANS: A RISING TREND OF A WORRYING FUTURE

**Dr. Silva IBRAHIMI PhD \***

**Research Director EYRA Psychosocial Assistance, Boston USA, Lecturer “University of Tirana”**

**ORCID ID: 0000-0003-3233-1157**

**Dott.Ervin IBRAHIMI MD\*\***

**Medical Responsabile Azzaruolo, Cooss- Marche, Italy**

### ABSTRACT

Juvenile delinquency is a worrying phenomenon not only for the Western Balkans societies but also globally. Considering the ever-increasing dimensions of this phenomenon, we intend to treat in detail all the constituent elements of this form of expression and development of criminality, in the criminological and penological aspects. The object of this paper will be to examine the evolution of the juvenile justice system in the Western Balkans, the factors that lead minors to commit criminal offenses, as well as the types of criminal offenses committed by them. Special treatment will also be given to aspects of the criminal responsibility of minors, the age for criminal responsibility, and attitudes regarding this age limit. Equal importance will be given to the criminal proceedings of minors with theoretical treatments and various practical issues, up to special procedural guarantees. An important place will be occupied by the system of punishments and educational and medical measures, alternative punishments, in aid of the rehabilitation of minors involved in crimes, as well as the efficiency of the penitentiary policies that the Western Balkans single states undertake towards minors. The study will also focus on the presentation of the different approaches that renowned researchers have and will also have a comparative treatment with developed countries, arguing our position regarding the issues under study. The analyses carried out on this topic aim to help all subjects involved in the criminal justice system, researchers in this field, and the general audience to obtain adequate information to recognize, combat, and prevent this phenomenon that is serious all over the world.

**Keywords: delinquency, juveniles, crimes, criminal justice, efficiency, Western Balkans**

## TRANSCULTURAL HEALTH CARE: NURSING CARE FOR OF FOREIGN ETHNICITY PEOPLE

**Dott.Ervin IBRAHIMI MD\*\***

**Medical Responsabile Azzero, Cooss- Marche, Italy**

**Dr. Silva IBRAHIMI PhD \***

**Research Director EYRA Psychosocial Assistance, Boston USA, Lecturer “University of Tirana”**

**ORCID ID: 0000-0003-3233-1157**

### ABSTRACT

Considering the growing number of foreign individuals, immigrants, and refugees interacting with local communities and their services in the EU, it is essential to examine cultural interaction models specifically within the healthcare sector. A thorough investigation of the care and support currently offered about foreign individuals will help identify challenges faced by professionals in their practice, as well as highlight barriers to effective interaction between those receiving assistance and those providing it. Furthermore, this study will explore potential strategies for improvement aimed at promoting awareness of the cultural diversity inherent in everyone, and at accurately interpreting the behaviors and needs of both healthy and ill persons. The qualitative results of this review reveal the current state of scientific literature gaps concerning the cultural competence of healthcare providers and its significance in the care process for patients from multi-ethnic backgrounds. Particularly concerning is the training of current and future healthcare workers and the management of aspects associated with palliative care.

Keywords: transcultural, health care, nursing, foreign ethnicity, palliative care

**FAMILY AND COMMUNITY NURSING NEW SCENARIOS FOR THE HEALTH WELFARE****Dott.Ervin IBRAHIMI MD\*\***

Medical Responsabile Azzeruolo, Cooss- Marche, Italy

**Dr. Silva IBRAHIMI PhD \***

Research Director EYRA Psychosocial Assistance, Boston USA, Lecturer “University of Tirana”

**ORCID ID: 0000-0003-3233-1157****ABSTRACT**

The origin of the Family and Community Nurse (IFeC) can be traced to the release of the document Health 21 by the Regional Office of the World Health Organization (WHO) for Europe. The primary objectives that directed the formation of IFeC consist of promoting and safeguarding health throughout an individual's life, along with reducing the occurrence of major diseases and alleviating the suffering associated with them in the population. The significance attributed to this new role within the family setting is further highlighted in the WHO Munich Declaration, where nurses, along with midwives, are recognized as vital in tackling public health challenges and ensuring the delivery of high-quality, accessible, equitable, efficient, and sensitive health services. The goal of this paper was to determine through literature analysis the optimal organizational model of IFeC. Additionally, the goal is to assess the effectiveness of the ITACA (Information, Training, Accessibility, Caregivers, Assessment) intervention in enhancing self-care management. The research findings emphasize the crucial role of the Family and Community Nurse in their dedication to improving community health by addressing prevention, promotion, and access to care issues. The strategies to advance the integration of social and health services involve strengthening territorial care services by expanding facilities and structures in the community. This has been accomplished through the implementation of innovative methods of remote health care and eHealth initiatives, fostering self-care, managing chronic illnesses, and providing support for home care. The introduction of these initiatives has aided in enhancing the management of chronic conditions, decreasing unnecessary hospital admissions, and overall improving patients' quality of life, while also lowering healthcare costs. The identification of Family and Community Nursing models has resulted in increased cohesion in care, ensuring a thorough and integrated approach to addressing the physical and psychosocial needs of patients.

**Keywords:** Family and Community Nurse, ITACA, community health, promotion programs, holistic approaches

## TRANSCULTURAL HEALTH CARE: NURSING CARE FOR OF FOREIGN ETHNICITY PEOPLE

**Dott.Ervin IBRAHIMI MD\*\***

**Medical Responsabile Azzeruolo, Cooss- Marche, Italy**

**Dr. Silva IBRAHIMI PhD \***

**Research Director EYRA Psychosocial Assistance, Boston USA, Lecturer “University of Tirana”**

**ORCID ID: 0000-0003-3233-1157**

### ABSTRACT

Considering the growing number of foreign individuals, immigrants, and refugees interacting with local communities and their services in the EU, it is essential to examine cultural interaction models specifically within the healthcare sector. A thorough investigation of the care and support currently offered about foreign individuals will help identify challenges faced by professionals in their practice, as well as highlight barriers to effective interaction between those receiving assistance and those providing it. Furthermore, this study will explore potential strategies for improvement aimed at promoting awareness of the cultural diversity inherent in everyone, and at accurately interpreting the behaviors and needs of both healthy and ill persons. The qualitative results of this review reveal the current state of scientific literature gaps concerning the cultural competence of healthcare providers and its significance in the care process for patients from multi-ethnic backgrounds. Particularly concerning is the training of current and future healthcare workers and the management of aspects associated with palliative care.

Keywords: transcultural, health care, nursing, foreign ethnicity, palliative care



## MENTORING AND TRAINING THE ENTRY-LEVEL PUBLIC HEALTH WORKFORCE ON EXPERIENTIAL LEARNING IN AN ACADEMIC SETTING

**Author Name: Anam Fatima<sup>\*1</sup>, Asma Awan<sup>1</sup> & Manoj Sharma<sup>1,2</sup>**

**University of Nevada Las Vegas, Department of Social & Behavioral Health,**

**School of Public Health, Las Vegas. USA.**

**[fatima1@unlv.nevada.edu](mailto:fatima1@unlv.nevada.edu) +1(725)577-9264**

**ORCID: 0009-0008-7794-1446**

**[asma.awan@unlv.edu](mailto:asma.awan@unlv.edu) +1(702)895-2260**

**ORCID: 0009-0002-0535-218X**

**<sup>2</sup>Department of Internal Medicine. Kirk Kerkorian School of Medicine at UNLV. University of Nevada,  
Las Vegas**

**[manoj.sharma@unlv.edu](mailto:manoj.sharma@unlv.edu) +1(702)895-2687**

**ORCID: 0000-0002-4624-2414**

### **Abstract**

**Background:** A Southwestern University in the United States received an American Rescue Plan Act (ARPA) scholarship grant to fund undergraduate students from the Bachelor's in Public Health (BSPH) and Bachelor's in Healthcare Administration (BSHCA) programs on applying experiential learning in the state. This presentation reviews the program's process and evaluation.

**Methods:** Applicants were evaluated based on academic performance, project feasibility, personal statements, and alignment with the program's goals. A committee from the University's School of Public Health assessed each applicant's understanding of social determinants of health, commitment to public health, and potential field impact. Each applicant was assigned a mentor. The program's first cycle was evaluated using quantitative surveys and qualitative focus group discussions (FGDs).

**Results:** About 70% of applicants were women, reflecting workforce trends where 72% of state-level public health professionals are women. The cohort included 40% BSHCA and 60% BSPH students, with shared interests in substance use, behavioral health, health disparities, and vulnerable populations. All applicants exceeded the minimum GPA requirement of 2.80/4.00, with an average GPA of 3.59/4.00. Applicants outlined various learning outcomes, including building professional connections, administering Narcan for opioid overdoses, and improving healthcare access for low-income families. Some participants expressed interest in future careers with organizations such as the State Department of Health and Walgreens Pharmacy.







**Conclusions:** Experiential learning must be the cornerstone of training entry-level public health professionals. The ARPA Scholarship program effectively develops a sustainable healthcare workforce pipeline to address workforce shortages through augmenting experiential learning.

**Keywords:** ARPA Scholarship Program, Workforce Development, Public Health, Healthcare Administration, Healthcare Workforce Shortage

## EVALUATING THE ROLE OF EXPERIENTIAL LEARNING IN SHAPING OUTCOMES IN A MASTER OF PUBLIC HEALTH PROGRAM AT A SOUTHWESTERN UNIVERSITY

**Sharmistha Roy, MBBS, MPH, MPH, CHES<sup>®</sup>**

**ORCID:** 0009-0000-2691-938X

[sharmistha.roy@unlv.edu](mailto:sharmistha.roy@unlv.edu)

PhD Scholar & Teaching Assistant

Department of Social and Behavioral Health

School of Public Health

University of Nevada, Las Vegas

Las Vegas, USA.

**Asma T Awan, DrPH, MSHI, MPH, MBBS, FRSPH**

[asma.awan@unlv.edu](mailto:asma.awan@unlv.edu)

Program Manager Administrative Faculty.

Department of Social and Behavioral Health.

School of Public Health.

University of Nevada, Las Vegas, USA

**Dr. Manoj Sharma, MBBS, Ph.D., MCHES<sup>®</sup>**

**ORCID:** 0000-0002-4624-2414

[manoj.sharma@unlv.edu](mailto:manoj.sharma@unlv.edu)

Professor

Department of Social & Behavioral Health

School of Public Health

&

Adjunct Professor

Department of Internal Medicine

Kirk Kerkorian School of Medicine at UNLV

Las Vegas, USA.

**[Introduction-** Contemporary emphasis in the Master of Public Health (MPH) curriculum directs students toward experiential learning such as service learning and internship. Higher education programs often incorporate internships or service learning, attracting service-oriented students from diverse fields and highlighting the value of blending theoretical and practical knowledge. This approach is particularly vital in public health education, where students pursuing advanced degrees seek opportunities for professional experience alongside rigorous coursework. Despite its significance, limited research exists on the effectiveness of this coordination. The proposed project, funded by the American Rescue Plan Act (ARPA) scholarships, aims to evaluate the role of integrated didactic and experiential learning in developing a highly skilled and efficient public health workforce.

**Methods-** This project aims to assess the significance of didactic-experiential coordinated learning in

cultivating a skilled public health workforce. We implemented this initiative at a southwestern university, focusing on MPH students engaged in an experiential learning scholarship program. A sequential quantitative-qualitative methodology was employed to collect data on demographics, academic performance, project objectives, and outcomes, alongside qualitative insights from focus group discussions regarding student experiences in experiential learning.

**Result-**Out of 20 applicants, 10 MPH students were awarded ARPA scholarships for diverse projects addressing various public health issues, including a study of interventions to increase physical activity behavior among Hispanic adults, distribution of Narcan within Las Vegas, Post-traumatic stress disorder access to healthcare for AAPI elders in Las Vegas, elucidating the molecular epidemiology of West Nile Virus in Southern Nevada, and Smoking/tobacco harm perception among US youth. The findings from quantitative surveys and qualitative discussions underscored the critical role of experiential learning.

**Conclusion-** Experiential learning is vital for developing the skills and competencies necessary for MPH students. It prepares them to address public health issues, fosters professional readiness, and equips them to navigate the healthcare landscape's complexities.]

**Keywords-** Experiential learning, Theoretical knowledge, Professional readiness

## STRESSES AT THE INTERFACE

**Toufik Bousnane<sup>1</sup>**

<sup>1</sup> Ghardaia University, BP 455 Ghardaia 47000, Algeria

### **Abstract**

The bone–cement interface has been recognized as a key factor in the failure of cemented total hip arthroplasty (THA). It plays a crucial role in the long-term stability and durability of prosthetic implants after surgery. This study aims to investigate the impact of cement penetration into the bone on the damage occurring at the interface. While previous research has primarily focused on damage accumulation within the cement mantle with varying levels of cement penetration, this study examines the integrity of the bone–cement interface under different mechanical conditions. The results indicate that debonding predominantly occurs in the proximal and medial zones of the interface. The adhesion between the bone and cement is mainly influenced by the extent of cement penetration into the bone.

**Keywords:** Interface integrity, Cemented total hip arthroplasty (THA), Finite element analysis, Cement penetration.

## THE KNOWLEDGE AND PRACTICES OF HEALTHCARE PROFESSIONALS REGARDING TEAMWORK IN THE EMERGENCY DEPARTMENT OF KENITRA

**GHIZLANE BOUAZZA<sup>1,2\*</sup>, TAOUDA HASNAE<sup>1,2</sup> SOUFIANI ABDELAATI<sup>1</sup> BOUALAM  
ABDERAHMAN<sup>1,2</sup> BELOMARIA MOHAMED<sup>1,2</sup>HAJAR LEGHLIBI<sup>1,2</sup>**

1. Laboratory of Natural Resources and Sustainable Development, Ibn Tofail University, Kenitra
2. Higher Institute of Nursing Professions and Health Techniques, Rabat - Kenitra Annex

**ORCID:** (<https://orcid.org/0009-0002-8267-9426>),

**\*EMAIL:** [ghizlanebouazza16@gmail.com](mailto:ghizlanebouazza16@gmail.com)

**Abstract:** The objective of this descriptive, exploratory, and qualitative study is to examine the knowledge and practices of healthcare professionals regarding teamwork within emergency services. A questionnaire was administered to a sample of 41 healthcare staff, distributed according to their professional profiles: 63.4% nurses, 26.8% doctors, and 9.8% nursing assistants, with a female predominance of 68%.

The results revealed the crucial importance of effective interprofessional collaboration to improve the overall performance of the team and the quality of care provided to patients. A good understanding of the fundamental principles of teamwork was observed, particularly the importance of communication and team meetings as essential levers for optimal patient care.

However, several dysfunctions were identified, such as disparities in workload distribution, lack of time dedicated to meetings, and communication gaps between team members.

The recommendations arising from this study aim to raise awareness among managers about strategies that could enhance the effectiveness of teamwork organization, with the goal of improving the quality of care and patient safety. These proposals do not claim to offer a perfect solution but seek to encourage the adoption of corrective measures aimed at ensuring collective and coordinated care.

**Keywords:** Teamwork - Communication - Quality of care - Patient satisfaction - Collaboration - Synergy - Cohesion - Interdisciplinary - Shared responsibilities - Conflict management - Collective engagement - Mutual learning - Collaborative culture



## WHAT'S NEW IN STROKE: INSIGHTS FOR CLINICAL PRACTICE WITH NEUROPOLEN

**Major Gheorghe GIURGIU<sup>1</sup>, Prof. dr. Manole COJOCARU<sup>2,3</sup>**

**<sup>1</sup>Deniplant-Aide Sante Medical Center, Biomedicine, Bucharest, Romania**

**deniplant@gmail.com; Telephone: +40 744 827 881**

**<https://orcid.org/0000-0002-5449-2712>**

**<sup>2</sup>Academy of Romanian Scientists**

**<sup>3</sup>Titu Maiorescu University, Faculty of Medicine, Bucharest, Romania [cojocar.manole@gmail.com](mailto:cojocar.manole@gmail.com);**

**Telephone: +40 723 326 663**

**<https://orcid.org/0000-0002-7192-7490>**

Background Disturbances along the brain-gut-microbiota axis may significantly contribute to the pathogenesis of stroke. Alterations in the gut microbiota composition induce increased permeability of the gut barrier and immune activation leading to systemic inflammation, which in turn may impair the blood-brain barrier and promote neuroinflammation, neural injury, and ultimately stroke. Nutrition is known to play an important role in the pathogenesis of stroke. In addition, the use of nutraceuticals can be part of a comprehensive approach in stroke.

Objective There is a strong link between stroke and chronic inflammation. Modification of the gut microbiota composition by nutraceuticals may create new preventive and therapeutic options in stroke. To arrive at these observations, the authors examined how Neuropolen and diet affect stroke. We are currently assessing whether indoles can also stimulate formation of neurons in stroke.

Materials and methods Imbalances in the gut microbiota can be also associated with the stroke. There is increasing interest in the role of the peripheral immune system in stroke.

Results It has now been shown that microbiota affects brain functions through various metabolites with potentially positive or, conversely, toxic properties. The immune system has a prominent role in stroke pathogenesis with both innate and adaptive immunity in the central nervous system.

Conclusion Stroke is the most common cause of adult disability. When blood flow to the brain is stopped or reduced during a stroke, some brain cells die because they stop getting the oxygen and nutrients they need. Existing evidence suggests that nutraceuticals and lifestyle changes may reduce disability and save lives.

Keywords: stroke, gut microbiota, brain-gut-microbiota axis, nutraceuticals, Neuropolen

## DETERMINANTS OF TUBERCULOSIS DISTRIBUTION IN SIDI KACEM PROVINCE, MOROCCO: A THREE-YEAR RETROSPECTIVE STUDY

Abderrahmane Boualam<sup>1,2\*</sup>, Abdelaati Soufiani<sup>1</sup>, Driss Touil<sup>2</sup>, Yassine Mounian<sup>1</sup>, Ghizlane Bouazza<sup>2</sup>, Otmane El Brini, Mohammed Belomaria<sup>2</sup>, El Mahjoub Aouane<sup>1</sup>.

<sup>1</sup> Laboratory of Natural Resources and Sustainable Development, Department of Biology, Faculty of Sciences, Ibn Tofail University, B.P. 133, 14000, Kenitra, Morocco

<sup>2</sup> Higher Institute of Nursing and Health Technology Professions – Kenitra, Morocco

\*Corresponding author: [boualamabderrahmane@gmail.com](mailto:boualamabderrahmane@gmail.com)

### Abstract:

This study analyzed 1,506 tuberculosis cases reported between 2018 and 2020 in Sidi Kacem province, Morocco, to investigate factors influencing disease distribution. The findings showed a higher prevalence in rural areas (55%) compared to urban settings (45%), along with significant seasonal variations, suggesting links to climatic conditions. Key factors included inadequate housing, overcrowding, limited access to healthcare, and geographical characteristics such as altitude and population density. Rural communities were disproportionately impacted, reflecting inequalities in living conditions and healthcare infrastructure. Seasonal peaks highlighted the need to address climatic influences on transmission. These results emphasize the importance of incorporating environmental and geographical considerations into public health strategies. Targeted measures, including improved housing, expanded rural healthcare services, and awareness campaigns, are critical for effective tuberculosis control. This study offers important insights to guide equitable and impactful prevention programs.

**Keywords:** Tuberculosis; Environmental determinants; Geographic distribution; Rural health; Seasonal variation; Housing conditions; Morocco

## UNDERSTANDING MEDICATION COMPLIANCE IN DIABETIC PATIENTS: ASSOCIATIONS WITH STRESS LEVELS AND SELF-ESTEEM - A STUDY FROM KENITRA, MOROCCO

Abdelaati.Soufiani <sup>1\*</sup>, Abderrahmane.Boualam<sup>1</sup>, Yassine.Mouniane<sup>1</sup>, Hassna.Touda<sup>2</sup>, Ghizlane.Bouazza<sup>2</sup>, Driss.Touil<sup>2</sup>, Driss.Hmouni<sup>1</sup>

<sup>1</sup> Laboratory of Natural Resources and Sustainable Development, Department of Biology, Faculty of Sciences, Ibn Tofail University, B.P. 133, 14000, Kenitra, Morocco

<sup>2</sup> Higher Institute of Nursing and Health Technology Professions – Kenitra, Morocco

\*Corresponding author: [abdelaati.soufiani@uit.ac.ma](mailto:abdelaati.soufiani@uit.ac.ma)

### Abstract:

**Introduction:** Therapeutic adherence represents a major challenge in diabetes management [1]. This study explores the relationships between perceived stress, self-esteem, and medication adherence. **Methods:** A cross-sectional study was conducted with 116 diabetic patients (34 T1D, 82 T2D) at an urban health center in Kenitra. Stress (PSS-10), self-esteem (Rosenberg), and adherence (Morisky-Green-Girerd) were assessed [2,3]. **Results:** 85% of patients show moderate adherence, 10% low adherence, and 5% good adherence. Stress is negatively correlated with adherence ( $r=0.328$ ;  $p<0.001$ ), while self-esteem is positively associated with it ( $r=-0.249$ ;  $p<0.007$ ) [4]. Type II diabetics show higher stress levels and more fragile self-esteem. **Conclusion:** This study highlights the importance of screening and managing psychological factors to improve therapeutic adherence [5].

**Keywords:** Diabetes, therapeutic adherence, perceived stress, self-esteem, Kenitra, Morocco

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## PHYSICO-CHEMICAL PROPERTIES OF SOIL IN A PROTECTED AREA NETWORK (CHURDHAR WILDLIFE SANCTUARY IN WESTERN HIMALAYA, INDIA)

Usha Thakur\*

\*Department of Botany, MCM DAV College Kangra-176001 (Himachal Pradesh)

\*[thakurusha994@gmail.com](mailto:thakurusha994@gmail.com)

### Abstract

The present work deals the physico-chemical properties of soil along an altitudinal gradient in Churdhar Wildlife Sanctuary (CWS), Western Himalaya, India. CWS is one of the protected areas of Western Himalaya located in the state of Himachal Pradesh and covers a great range of altitude from 1900-3647 m. A total five forest sites were selected with variations in the altitudes and aspects. The composite soil samples were collected from two depth viz., 0-15 cm and 15-30 cm. The soils of the area mainly falls into two textural classes i.e. clay-loam and sandy-loam whereas soil colour varies from yellowish brown to dark brown. Water holding capacity showed significant positive correlation with moisture content whereas nitrogen exhibited a positive correlation with organic carbon. The pH of soil decreases with increase in the altitudes.

**Key words:** Heterogeneous Environment, Resilience, Biogeochemical Cycle. Textural Triangle

## THE POTENTIAL OF SUPRAMOLECULAR ORGANIC FRAMEWORKS: SHAPING THE FUTURE OF MOLECULAR DESIGN

Ansar Bilyaminu adam<sup>1</sup>, Musa Yahaya Abubakar<sup>1</sup>, and Salim Abdullahi Baso<sup>2</sup>

<sup>1</sup>Department Of Chemical Sciences Federal University Wukari

<sup>2</sup>Department of Chemistry, Sa adatu Rimi Colleage of Education, Kumbotso Kano.

Corresponding Auhour: ansarbilyamin@gmail.com

### Abstract

Supramolecular organic frameworks (SOFs) have emerged as a versatile and innovative class of materials, revolutionizing molecular design at the intersection of chemistry and materials science. This review explores the development of supramolecular organic frameworks (SOFs), a versatile and innovative material class that has revolutionized molecular design in chemistry and materials science. SOFs have the unique ability to self-assemble through non-covalent interactions, allowing for precise control over their structural and functional properties. SOFs are known for their high porosity and selective adsorption capabilities, which address energy and environmental sustainability challenges. They are also potential in drug delivery systems due to their biocompatibility, controlled release mechanisms, and capacity to encapsulate therapeutic agents. SOFs are also used in sensing technologies due to their responsiveness to environmental stimuli and high specificity and sensitivity. The study highlights the transformative potential of SOFs in addressing global challenges and outlines future directions for research in scalability, durability, and multifunctionality.

**Keywords:** Supramolecular frameworks, molecular design, self-assembly, drug delivery, sensing.

### Introduction

Molecular design has undergone a transformative shift with the advent of supramolecular chemistry, moving beyond the constraints of traditional covalent chemistry. Supramolecular systems have gained increasing importance in modern chemistry due to their capacity to enable the design of intricate architectures and functional materials (Abubakar, M. Y., et al., 2024). By leveraging non-covalent interactions—such as hydrogen bonding,  $\pi$ - $\pi$  stacking, and van der Waals forces—scientists have unlocked new pathways for molecular assembly and function. Supramolecular Organic Frameworks (SOFs) embody this revolution, creating highly organized, dynamic structures characterized by their reversibility and modularity. According to Lehn (1995), these attributes are pivotal in realizing adaptive and functional molecular systems for diverse applications.



SOFs introduce an unparalleled level of design flexibility, enabling precise assembly and responsive behavior. Unlike their covalent counterparts, which are often rigid and static, SOFs adapt seamlessly to external stimuli, providing significant advantages in materials science and technology. Recent research by Stoddart et al. (2015) highlights how such adaptability makes SOFs promising candidates for stimuli-responsive systems, such as sensors and switchable materials.

This adaptability, coupled with reversibility, offers unprecedented opportunities for creating dynamic and tunable frameworks. These qualities are crucial in addressing evolving technological challenges, where systems must evolve in response to environmental or operational demands. For example, Zhang et al. (2021) demonstrated the superior reconfigurability of SOFs, which allows for self-healing materials and reusable catalysts.

Furthermore, the modular nature of SOFs permits the integration of diverse functional components, paving the way for highly customized and specialized materials. The modular design potential is particularly advantageous for cutting-edge applications such as catalysis, where tailored active sites can be introduced, as noted by Li et al. (2019).

The study explore the fundamental advantages of SOFs, including their adaptability, reversibility, and modularity, and examine their transformative impact on fields such as catalysis, optoelectronics, and energy storage. By bridging molecular precision with structural dynamics, SOFs exemplify a new frontier in molecular engineering, enabling innovation across scientific and technological domains.

#### 6) Supramolecular Design Principles

Supramolecular Organic Frameworks (SOFs) distinguish themselves through non-covalent synthesis a bottom-up approach that harnesses the principles of self-assembly and reversibility. These principles offer unparalleled opportunities to design dynamic and adaptable materials with precise control over their structure and function.

##### a) Modularity and Tunability

SOFs are constructed from molecular building blocks that can be easily modified to achieve specific properties, a feature essential for tailoring materials to suit diverse applications. This modularity enables the systematic exploration of structure-property relationships, as highlighted by Yan et al. (2020), who demonstrated that adjusting the functional groups on building blocks significantly altered catalytic and photophysical behaviors. By using interchangeable components, researchers can fine-tune pore sizes, interaction strengths, and chemical functionalities.

#### b) Hierarchical Organization

The ability to control interaction energies in SOFs facilitates the creation of ordered structures across multiple length scales, from nanoscale porosity to bulk macroscopic forms. Hierarchical organization is essential for applications requiring multiscale properties, such as energy storage and separation processes. For instance, Zhou et al. (2017) discussed how precise control over interaction parameters leads to nanoporous SOFs with high surface areas and enhanced gas storage capacity.

#### c) Dynamic Responsiveness

The non-covalent interactions within SOFs provide the flexibility to respond dynamically to environmental stimuli, including pH, temperature, and light. This adaptability has been exploited to create smart materials for applications such as drug delivery and environmental sensing. A study by Dong et al. (2018) illustrated how a pH-sensitive SOF demonstrated reversible changes in porosity, allowing for controlled guest molecule release.

### 7) Structural Diversity in SOFs

#### a) Architectural Versatility

SOFs exhibit remarkable architectural diversity, ranging from two-dimensional (2D) layered systems to three-dimensional (3D) porous networks. Each architecture offers distinct advantages, with 2D SOFs being ideal for surface-based applications like sensors and membranes, while 3D networks provide high surface area and porosity for catalysis and gas storage. A recent review by Kim et al. (2022) emphasized that this diversity stems from the flexibility in the molecular building blocks and the non-covalent assembly strategy.

#### b) Guest Molecule Incorporation

SOFs further extend their versatility by accommodating functional guest molecules within their frameworks. This feature enhances their performance in targeted applications, such as catalytic systems where active guest species can participate directly in chemical reactions. According to Lin et al. (2021), the integration of catalytic metal complexes within SOFs resulted in significant improvements in reaction rates and selectivity.

### 8) Applications of SOFs

The versatility and unique characteristics of Supramolecular Organic Frameworks (SOFs) position them at the forefront of material innovation. Their adaptable, modular design and dynamic non-covalent interactions enable applications across catalysis, energy storage, and sustainability. Below is an overview of their transformative roles in these key domains.

#### a) Catalysis

The ordered yet flexible structure of SOFs makes them exceptional platforms for catalysis, leveraging their modularity to incorporate catalytic centers with precision and their dynamic porosity to facilitate substrate

diffusion. These features provide unparalleled control over reaction environments, enhancing efficiency and selectivity.

Recent advances highlight their applications in photo-, electro-, and organocatalysis. For example, Chen et al. (2020) demonstrated that SOFs with embedded metal-organic clusters significantly improved catalytic rates in photocatalytic hydrogen production. Similarly, a study by Zhao et al. (2019) revealed that SOFs integrating redox-active ligands achieved high efficiency in electrocatalytic CO<sub>2</sub> reduction.

#### b) Energy Storage and Conversion

SOFs are emerging as a cornerstone in energy storage and conversion technologies, thanks to their high porosity and conductive molecular backbones. Their ability to store ions and enable efficient charge transport has proven critical for applications such as batteries, supercapacitors, and fuel cells.

**High Porosity for Ion Storage:** The large surface area of SOFs enhances their capacity for ion adsorption and retention, as noted by Park et al. (2018), who showed improved performance in lithium-ion batteries.

**Conductive Backbones:** Conductive SOFs, incorporating  $\pi$ -conjugated systems, facilitate rapid electron transfer, critical for charge-discharge cycles in energy storage devices (Wang et al., 2021).

**Integration of Functional Components:** SOFs can host ionic liquids and redox-active species, as demonstrated by Huang et al. (2020), where such hybrid materials exhibited excellent performance in supercapacitors.

#### c) Sustainable Materials

SOFs are at the forefront of sustainable development due to their eco-friendly synthesis methods, potential for biodegradability, and applications in environmentally critical areas.

**Carbon Capture:** SOFs exhibit high CO<sub>2</sub> adsorption capacities with selective binding properties, making them highly effective for carbon capture technologies. Lin et al. (2017) showed how SOFs with amine-functionalized pores achieved efficient CO<sub>2</sub> separation under ambient conditions.

**Water Purification:** The porous, customizable nature of SOFs allows them to adsorb and degrade pollutants in water, offering a sustainable solution for water purification (Li et al., 2020).

**Green Manufacturing:** SOFs enable low-energy, recyclable processes in industrial manufacturing, reducing carbon footprints and aligning with global sustainability goals. For example, Xu et al. (2022) reported the development of SOFs as catalysts for green polymerization techniques.

#### 9) Conclusion

Supramolecular Organic Frameworks (SOFs) are a revolutionary approach to molecular design, combining flexibility, functionality, and sustainability. These frameworks utilize non-covalent interactions like hydrogen bonding,  $\pi$ - $\pi$  stacking, and van der Waals forces to create adaptable, modular, and dynamic materials. Unlike

traditional covalent systems, SOFs can respond to external stimuli, reconfigure their structures, and integrate diverse functionalities, making them invaluable in addressing complex scientific and technological challenges. SOFs enable precise molecular tailoring, allowing for materials with specific attributes for diverse applications, such as catalysis and energy storage. Their modular nature allows for seamless integration of catalytic centers, conductive backbones, and functional guest molecules, making them ideal for applications requiring precision and control. Their dynamic porosity also enhances their utility, enabling selective interactions, efficient transport mechanisms, and reversible adsorption-desorption cycles. Sustainability is a cornerstone of SOF design, aligning with the global emphasis on eco-friendly and energy-efficient materials. SOFs are not just tools for material innovation but also serve as platforms for interdisciplinary research, bridging chemistry, physics, biology, and engineering to tackle pressing challenges like energy crises, environmental degradation, and sustainable development.

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## BIOSYNTHESIS AND PHARMACOLOGICAL EVALUATION OF MICROBIAL NATURAL PRODUCTS

Musa Yahaya Abubakar<sup>1</sup>, Ansar Bilyaminu adam<sup>1</sup> and D. Abubakar<sup>2</sup>

<sup>1</sup>Department Of Chemical Sciences Federal University Wuakari

<sup>2</sup>Department of Bioresource Development Centre Billiri (Biodec) National Biotechnology Development Agency (Nabda)

Corresponding Auhour: yahayaabubakarmusa2015@gmail.com

### Abstract

Microbial natural products continue to be a rich source of novel therapeutics, particularly in the fields of antimicrobial and anticancer drug development. This review delves into the biosynthetic pathways of microbial-derived compounds, such as polyketides and non-ribosomal peptides, which exhibit potent biological activities. Advanced genetic and metabolic engineering approaches have unraveled the biosynthetic machinery responsible for these bioactives, enabling the discovery and optimization of new molecules. Pharmacological evaluation of microbial natural products demonstrates their efficacy against multidrug-resistant pathogens and various cancer cell lines. These findings underscore the potential of microbes as a sustainable resource for innovative drug discovery. Microbial natural products offer untapped therapeutic opportunities, making them invaluable in combating global health challenges. Future efforts should focus on enhancing their production through biotechnological advancements.

### Keywords

Microbial natural products, biosynthesis, pharmacological evaluation, antimicrobial, anticancer, polyketides, non-ribosomal peptides, drug discovery.



## DETERMINANTS OF TUBERCULOSIS DISTRIBUTION IN SIDI KACEM PROVINCE, MOROCCO: A THREE-YEAR RETROSPECTIVE STUDY

Abderrahmane Boualam<sup>1,2\*</sup>, Abdelaati Soufiani<sup>1</sup>, Driss Touil<sup>2</sup>, Yassine Mounian<sup>1</sup>, Ghizlane Bouazza<sup>2</sup>, Otmane El Brini, Mohammed Belomaria<sup>2</sup>, El Mahjoub Aouane<sup>1</sup>.

<sup>1</sup> Laboratory of Natural Resources and Sustainable Development, Department of Biology, Faculty of Sciences, Ibn Tofail University, B.P. 133, 14000, Kenitra, Morocco

<sup>2</sup> Higher Institute of Nursing and Health Technology Professions – Kenitra, Morocco

\*Corresponding author: [boualamabderrahmane@gmail.com](mailto:boualamabderrahmane@gmail.com)

### Abstract:

This study analyzed 1,506 tuberculosis cases reported between 2018 and 2020 in Sidi Kacem province, Morocco, to investigate factors influencing disease distribution. The findings showed a higher prevalence in rural areas (55%) compared to urban settings (45%), along with significant seasonal variations, suggesting links to climatic conditions. Key factors included inadequate housing, overcrowding, limited access to healthcare, and geographical characteristics such as altitude and population density. Rural communities were disproportionately impacted, reflecting inequalities in living conditions and healthcare infrastructure. Seasonal peaks highlighted the need to address climatic influences on transmission. These results emphasize the importance of incorporating environmental and geographical considerations into public health strategies. Targeted measures, including improved housing, expanded rural healthcare services, and awareness campaigns, are critical for effective tuberculosis control. This study offers important insights to guide equitable and impactful prevention programs.

**Keywords:** Tuberculosis; Environmental determinants; Geographic distribution; Rural health; Seasonal variation; Housing conditions; Morocco

## IMPACT OF CATEGORIZATION ON LEARNING OF ENGLISH VOCABULARY BY UNDERGRADUATE PAKISTANI ESL LEARNERS: A STUDY OF SEMANTIC AND THEMATIC AND UNRELATED CLUSTERING

**Sidra Haroon**

**ORCID: <https://orcid.org/0000-0002-9879-9927>**

**E-mail: [sidra.haroon@umt.edu.pk](mailto:sidra.haroon@umt.edu.pk)**

**University of Management and Technology, School of Liberal Arts, Department of Linguistics and Communications, Lahore, Pakistan**

### **Abstract**

The present study aimed at investigating the impact of vocabulary categorization on learning of English vocabulary by Pakistani ESL learners. The study is carried out while taken into account three types of vocabulary clustering, namely: semantically related clusters, thematically related clusters and unrelated clusters. The main objective of the study was to identify the effects of each type of clustering on short-term and long-term memorization and retrieval of the vocabulary by undergraduate Pakistani ESL learners. Semantic Field Theory (1992), Schema Theory (1977) and Distinctive Hypothesis (1979) are used as theoretical framework of the study. Sample of the study was selected through convenient sampling. Pre-existing group were used for the study. It was a quantitative study. Quasi-experimental one-group design was employed in this study. Pre-posttest were used as tool for data collection. The collected data was analyzed using Paired t-test for both short-term and long-term impact on memorization of new words. Further the effect size of statistically significant groups was measured using Cohen's d. Results of the study reflected that for short-term memorization and retrieval of the vocabulary, both semantically related clusters and thematically related clusters provided optimal outcomes but thematically related cluster was more beneficial as compared to semantically related cluster for immediate memorization and retrieval. Whereas for the long-term memorization and retrieval of the vocabulary thematically related clusters produced optimal outcomes as compared to its counterparts. However, result of the unrelated cluster was not significant both for immediate and delayed posttests. The study concluded that both semantically related and thematically related clustering can produce optimal learning outcomes of new English vocabulary words for immediate memorization and retrieval but thematically related clusters may prove more beneficial as compared to semantically related clusters. However, for long-term memorization and retrieval of English words, thematically related clusters can be more beneficial. This study will be beneficial for both EFL teachers and learners and English syllabus designers.

**Keyword:** semantic clustering, thematic clustering, vocabulary, second language, vocabulary categorization

## ANTIBIOTICS AND THEIR RESIDUES IN WASTEWATER: A COMPREHENSIVE REVIEW ON ENVIRONMENTAL IMPACT AND ANTIBIOTIC RESISTANCE

Manal NAFI<sup>1,2</sup>, Assia BOUHOUDAN<sup>2</sup>, Amina LYAGOUBI<sup>3</sup>, Lahmoudi ADIL<sup>3</sup>, Jamal TOUTOUH<sup>3</sup>,  
Mohammed BAKKALI<sup>1</sup>, Nadira MOURABIT<sup>2</sup>

<sup>1</sup> Research Team in Biotechnology & Biomolecules Engineering (ERBGB), Faculty of Science and Technology of Tangier, Abdelmalek Essaâdi University, 90000, Tangier, Morocco.

<sup>2</sup> Laboratory of Research and Development in Engineering Sciences, Faculty of Science and Technology- Al Hoceima, Abdelmalek Essaâdi University, 32000, Al Hoceima, Morocco.

<sup>3</sup> Mohammed V Regional Hospital, 32000, Al Hoceima, Morocco.

ORCID: <https://orcid.org/0009-0000-5762-4154>

Email: Nafaimanal@gmail.com

### Abstract

The discharge of pharmaceutical products from various sources, including healthcare facilities, pharmaceutical industries, and communities, has become a major concern for aquatic ecosystems. Among these, antibiotics and their residues are prominent pollutants exacerbating the global challenge of antibiotic resistance. This literature review explores recent studies on antibiotics and their residues in wastewater and aquatic environments. The main objectives include assessing antibiotic levels in these environments to analyze resistance patterns, identifying common residues in effluents, determining pollution sources, evaluating contamination levels in aquatic ecosystems, and understanding their ecological repercussions.

Studies reveal the presence of various antibiotic residues, such as N4-acetyl sulfamethoxazole, N-desmethyl clindamycin, N-desethyl ciprofloxacin, oxociprofloxacin, 3-O-descladinosyl azithromycin, ampicillin acid, and penicilloic acid, in wastewater from healthcare facilities and pharmaceutical industries, as well as in surface waters. This prevalence signals an increased risk of antibiotic resistance and environmental pollution, disrupting diverse ecosystems.

The severe implications of these emerging pollutants underscore the urgency of continuous monitoring and the need for effective strategies to proactively mitigate their impact.

**Keywords:** Antibiotics, Residues, Wastewater, Antibiotic resistance, Aquatic environment.

**STUDY OF COMPLEXES OF MALONIC ACID AND METHYLMALONIC WITH GADOLINIUM.****Chaimaa Elkahlaoui<sup>1</sup>, and Chaimaa 1****Email: Elkahlaouichaimaa14@gmail.com****<sup>1</sup>University Ain CHOK, Faculty of Sciences, Department of chemistry Sciences,  
Casablanca, Morocco****Abstract:**

In this work, we shall present the results of investigations on the interaction of the gadolinium ion ( $Gd^{3+}$ ) with different chelation sites of mandelic acid and DL-serine (amino acid) formed in dilute solution for pH values between 5.50 and 7.50. The general formula of these new organometallic complexes is and (mandelate ions and serine ions). These gadolinium complexes detected, are colorless and have no absorption band UV-visible. In this sense, we have used an analytical technique called « Indirect Photometry Detection (IPD) » have identified major di-nucleaire and tri-nuclear complexes of these acids. This technique allowed us to determine the composition and stabilities of complexes predominate in solution, giving for these colorless complexes a molar ration (2:2) and (3:2) for mandilic acid and serine acid respectively, and we have shown that the composition and stability constant depends on the acidity of the medium. To complement previous results and to propose probable structures for these new coloress complexes, IR and Raman spectroscopy have been conducted to identify the different chelation sites for theses ligands.

**Keywords :**

Colorless Complexes, DL-Serine, Indirect Photometry Detection, Gadolinium Complexes, Mandelate Ions.

## IMPACT OF HEAVY METALS (NI AND CO) ON GROWTH AND BIOCHEMICAL RESPONSES IN MAIZE (ZEA MAYS)

Mahmoud Oudghiri <sup>1\*</sup>, Boutaina Yamani <sup>1</sup>, Noura Benlemlih <sup>1</sup>, Safae EL Aammouri <sup>1</sup>, Nagla Abid <sup>1</sup>,  
Najiba Brhadda <sup>1</sup>, Yassine Mouniane <sup>2</sup>, Mohammed Ibriz <sup>1</sup>

<sup>1</sup> Plant, Animal, and Agro-Industry Production Laboratory, Faculty of Sciences, Ibn Tofail University,  
Kenitra BP. 242, Kenitra 14000, Morocco

<sup>2</sup> Natural Resources and Sustainable Development laboratory, Faculty of Sciences, Ibn Tofail University,  
B.P 242, Kenitra, Morocco

\* Corresponding author: [mahmoud.oudghiri@uit.ac.ma](mailto:mahmoud.oudghiri@uit.ac.ma)

### Abstract.

This study examines the impact of heavy metals, particularly nickel (Ni) and cobalt (Co), on the growth of maize (*Zea mays* var. Torro Plus). Seeds were exposed to three concentrations of each metal (50, 100, 150  $\mu\text{mol}$ ) and grown for 21 days. Parameters measured included leaf and root growth, as well as levels of chlorophyll, proline, sugars, polyphenols and flavonoids. The results show that high concentrations of Ni and Co reduce plant growth and chlorophyll content, but increase proline and sugar levels, indicating a stress response. Polyphenols and flavonoids also increased, suggesting an antioxidant response. In conclusion, although maize is affected by these metals, it develops defence mechanisms. These results may help in the management of polluted soils and the selection of resistant crops.

**Keywords:** Nickel, Cobalt, Chlorophyll, Proline, Flavonoids, *Zea mays*.

## IMPACT OF WASTEWATER TREATMENT PLANTS ON THE ENVIRONMENT CASE : MOSTAGANEM WASTEWATER TREATMENT PLANT (WESTERN ALGERIA)

TALEB Mohamed Karim

Department of Architecture, USTO.MB University - Algeria

Laboratory of Environmental Monitoring Network (LRSE), University of Oran1, Algeria

[karimtaleb5@yahoo.fr](mailto:karimtaleb5@yahoo.fr)

### Abstract

The discharge of untreated or poorly treated wastewater into the natural environment generates catastrophic pollution for biodiversity and the quality of water resources. This is why our study aims to evaluate the activity of the wastewater treatment plant using the activated sludge process and its impact on the environment and agricultural irrigation. The results obtained show that wastewater treatment is an economical solution that increases agricultural yield and depollutes the environment.

### Keywords

Environment, Pollution, Standard, Wastewater, Wastewater treatment plant



## POTENTIAL ONCOGENIC MECHANISMS REGARDING HIGH RISK HUMAN PAPILLOMA VIRUS 16 & 18 IN CAUSING ORAL SQUAMOUS CELL CARCINOMA: AN OVERVIEW

**Author: Asad Ullah<sup>1\*</sup>**

**<sup>1</sup>Department of Pathology, University of Veterinary and Animal Sciences, Lahore, Pakistan.**

**\*Corresponding Author: Asad Ullah (MPhil Scholar) Department of Pathology, University of Veterinary and Animal Sciences, Lahore, Pakistan.**

### **Abstract**

Almost 20% of all cancers worldwide are believed to have an infectious origin, with viruses contributing to about 15% of the total cases. Notably, a significant proportion of viral-induced cancers emerge in the oral cavity and Human Papilloma Virus (HPV) stands as a potential candidate thus contributing 5% in the incidence of the total diagnosed cases for Oral Squamous cell carcinoma (OSCC). Although sexual behavior is a well established risk factor for HPV however, excessive use of tobacco, cigarette and alcohols can further favor the OSCC development in HPV 16 & 18 infected individuals. The double stranded DNA of high risk HPV 16 and 18 has a strong affinity for squamous cells of the oral cavity. the exact receptors for binding are unknown but these strains can transiently bind to laminin 332 and/or heparan sulfate proteoglycans (HSPGs), thus entering the cell and integrating E6 and E7 genes in host genome. This integration disrupts the normal functioning of key tumor suppressor genes, leading to changes in cellular processes such as proliferation, apoptosis, and genomic stability. Moreover, E6 protein can bind and degrade p53, a crucial tumor suppressor protein involved in maintaining genomic integrity and preventing cancer. Furthermore, the E7 protein has been found to interact with retinoblastoma protein, another important tumor suppressor that regulates the G1 checkpoint and prevents uncontrolled cell growth. This study investigates the potential oncogenic mechanisms that can be the key players in transitioning an infection into a cancer that can be life threatening. More investigation is required to grasp the molecular mechanisms involved in HPV-related oral cancer and to formulate successful prevention and treatment approaches.

**Key Words:** Human Papilloma Virus 16, Human Papilloma Virus 18, Oral Squamous cell carcinoma, Infection and Cancer



## ZOOLOGICAL PROBLEMS OF ECOSAFETY AND RESEARCH WORK IN UKRAINIAN EDUCATION

**PhD, Hanna V. Rashevka**

**ORCID NO: 0000-0001-9350-9030**

**e-mail: [rashevka.anna@kdpu.edu.ua](mailto:rashevka.anna@kdpu.edu.ua)**

**Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine**

**Lecturer, Maksim O. Kvitko**

**ORCID NO: [0000-0002-3713-7620](https://orcid.org/0000-0002-3713-7620)**

**e-mail: [kvitko.max@gmail.com](mailto:kvitko.max@gmail.com)**

**Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine**

**PhD, Eduard O. Yevtushenko**

**ORCID: [0000-0002-8109-6002](https://orcid.org/0000-0002-8109-6002)**

**e-mail: [yevtushenko69@ukr.net](mailto:yevtushenko69@ukr.net)**

**Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine**

### ABSTRACT

Research behavior is now considered a lifestyle of every modern person, not just those who are engaged in scientific developments. The need to explore the world around us is one of the most valuable and remarkable features of the human psyche, which provides the conditions for its adaptation to the external environment, satisfaction of creative, spiritual and emotional needs. The introduction of research training in high school biology can significantly improve students' understanding of this science and develop their research skills. Below we can list theoretical and methodological tasks that effectively implement research training in biology in high school.

The research activities of students on the materials of the study of the red fox (*Vulpes vulpes*) in the Apostolivskyi district are of great relevance for several reasons: the study of the fox is important for understanding the biological diversity and ecosystem of the Apostolivskyi district near the city of Kryvyi Rih, Dnipro region; the study of the fox can help in developing strategies for the conservation and protection of nature in the district, in particular, in areas of high natural risk for foxes; foxes often face anthropogenic threats, such as habitat destruction, pollution and hunting, the study of these aspects can help develop measures for this species of conservation; foxes can be numerous and carry diseases such as rabies; the study of fox populations



in their understandable dynamics and changes in numbers can be of great importance for regional ecological studies.

The red fox is a key species in the predatory ecosystem and affects the distribution and abundance of other species. The study of their biology and distribution can help in managing the risk to human and animal health. The implementation of these theoretical and methodological principles will help create stimulating biology education for high school students, develop their research ability and interest in this science.

**Keywords:** environmental research activities, school biology, ecological state, aquatic living resources.

## **SAFETY DIRECTION OF HUMAN LIFE AND YOUTH HEALTH PROTECTION IN THE EDUCATION SECTOR OF THE INDUSTRIAL CITY OF KRYVY RYH IN UKRAINE**

**Lecturer, Maksim O. Kvitko**

ORCID NO: [0000-0002-3713-7620](https://orcid.org/0000-0002-3713-7620)

e-mail: [kvitko.max@gmail.com](mailto:kvitko.max@gmail.com)

Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine

**Senior Lecturer, Hanna O. Kvitko**

ORCID NO: [0000-0002-3713-7620](https://orcid.org/0000-0002-3713-7620)

e-mail: [hannakvitko7@gmail.com](mailto:hannakvitko7@gmail.com)

Kryvyi Rih Professional College of State Non-commercial Company “State University “Kyiv Aviation Institute”, Kryvyi Rih, Ukraine

**Prof. Dr. Olena A. Lykholat**

ORCID NO: [0000-0002-3722-8602](https://orcid.org/0000-0002-3722-8602)

e-mail: [lykholat2010@ukr.net](mailto:lykholat2010@ukr.net)

University of Customs and Finance, Dnipro, Ukraine

**Prof. Dr. Nataliia O. Chuvasova**

ORCID NO: 0000-0001-7636-6277

e-mail: [k\\_zoology@kdpu.edu.ua](mailto:k_zoology@kdpu.edu.ua)

Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine

### **ABSTRACT**

The problems of health protection, life safety and environmental culture that modern society has encountered, as well as the challenges that were caused, primarily, by socio-economic factors, can only be solved by educated youth, i.e. citizens who are aware of their responsibility to future generations, nature and are able to rationally handle the natural resources provided to them. The document in the regulatory and technical documentation is the regulatory acts of the System of Occupational Safety Standards. The main goal of improving the safety of the educational process of working conditions is to achieve a social effect of cooperation, i.e. ensuring occupational safety, preserving the lives and health of workers, reducing the number of accidents and diseases at work in the Kryvyi Rih district of the Dnipro region in Ukraine. That is why the problems of education, upbringing, the formation of a human culture of health care, life safety and

environmental safety of Kryvyi Rih, as well as the management of natural and social resources are becoming increasingly important in ensuring occupational safety and sustainable development of the region's residents. Therefore, a very important process is the formation of a conscious attitude towards compliance with occupational safety requirements in future teachers. After all, educating the primary pedagogical level to adhere to the basic requirements of safe behavior and a conscious attitude towards preserving one's own health is the main task for the further implementation of safety rules in the modern New Ukrainian School.

The purpose of the work is to promote understanding of the essence of regional problems of labor protection, life safety and environmental safety, to prepare a theoretical basis for training pedagogical students in all types of modern hybrid threats in Ukraine and the world, to foster civic position and responsible attitude to the safety of life and health in educational institutions and the environment of its stay.

The direction of human life safety, environmental safety and health protection of youth in education was a prerequisite for the emergence of programs for the sustainable development of the Kryvyi Rihthe as an industrial region. Also, these areas of higher education form the basis for educational processes in general education institutions of the region.

**Keywords:** sustainable development, life safety, educational process, hybrid threats.

## DUE PROCESS OF LAW IN RESPONSE TO UKRAINIAN CRISIS

Leila Bijos PhD in Sociology, University of Brasilia/UCSD

### Abstract:

This article focuses on the economic sanctions and the listing process in the light of due process of law in Ukraine. Due to Ukrainian crisis, the European Union is entitled to impose such sanctions under international law. It has a qualitative approach, using the methodology of documental analysis (particularly the documents from the European Union Council and Commission) and bibliographical research. Historically, since 2014 the European Union has imposed restrictive measures against the Russian Federation in response to the annexation of Crimea and Sevastopol, as well as 'destabilization' of Ukraine. The current plan of Russia is to advance wherever possible. On the other side, Ukraine, for both objective and subjective reasons, cannot halt the enemy's momentum or seize the initiative on the frontlines. For now, all trends indicate that it is unlikely to turn the situation in Ukraine's favor soon.

Western leaders appear to doubt the possibility of reclaiming all Ukrainian territories by force, and they are increasingly calling for peace negotiations with Russia. This idea is clearly articulated by Donald Trump and his team. The further fate of the war now largely lies in the hands of the United States. While no clear strategy for ending hostilities has yet come from the US, it is certain that immediately after the inauguration, the new White House team will actively engage in a "peace process." The rhetoric about continuing the war until Ukraine reaches its rightful 1991 borders has disappeared from their public discourse.

Similarly, Ukrainian officials have cautiously started to express their willingness to negotiate. At least, following a conversation with the Ukrainian president, Donald Trump stated that Volodymyr Zelenskyy is ready to make a deal to end the war. This likely implies some willingness to accept compromises, given Ukraine's less-than-ideal current position. The specifics of such compromises would be determined during negotiations. Zelenskyy, for his part, after meeting with Trump, stated that Ukraine seeks a just peace and strong security guarantees that would prevent Russia from returning to war.

### What to expect in the coming months

Three other significant factors remain unknown. First, what security guarantees Ukraine might receive in the event of a cessation of hostilities. Second, whether Russia is ready for negotiations. The White House administration has tools to compel Moscow - using either "carrots" or "sticks" - to negotiate an end to the fighting. These could include collapsing oil prices, imposing secondary sanctions on countries aiding Russia, or expanding sanctions to untouched sectors of the Russian economy. Third, whether the US is prepared to deploy these measures. Considering all these known and unknown factors, scenarios for the war's development in 2025 can be projected.



**BUSINESS MODELS IN THE CREATIVE ECONOMY****Meidiana CİTRA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0004-2850-6561>**Bahtiar EFFENDİ**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0000-0002-3472-2103>**Abstract**

This study aims to analyze effective business models in supporting the growth of the creative economy sector, which is increasingly becoming an important pillar in economic development. This study uses a literature review approach from books and journals related to the creative economy business model, this allows for an in-depth understanding of the dynamics of business models in the creative economy. The main issues discussed in this paper are challenges such as inadequate technological infrastructure, limited access to funding, and low digital literacy are still the main obstacles in developing sustainable business models in the creative economy sector. This study also discusses how important product innovation and digital marketing strategies are to maintaining competitiveness in the global market. This study shows that a successful business model in the creative economy sector requires an innovative, adaptive, and technology-based approach. Product innovation, service diversification, and utilization of e-commerce platforms have proven effective in expanding market reach and increasing operational efficiency of business actors. And ultimately an adaptive and innovative business model is the key to driving economic growth.

**Keywords** :Creative Economy, Business Model, İnnovation, Challenges, Digital Strategy.

## IMPROVING UNDERSTANDING OF DIALECTICAL MODELS OF SCIENCE AND RELIGION FOR ISLAMIC ECONOMICS STUDENTS AT UIN KH ABDURRAHMAN WAHID PEKALONGAN

**Fika DEALOVA**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0009-3830-3932>

**Octavia Janate AULIANA**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0006-2312-5844>

**Radit Alfa RIQZA**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0009-1041-3056>

**Novi MARISKA**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0006-5056-2302>

### ABSTRACT

This study aims to improve the understanding of Islamic Economics students at UIN KH Abdurrahman Wahid Pekalongan about the dialectical models of science and religion, namely conflict, independence, dialog, and integration. This understanding is important in dealing with contemporary issues related to Islamic economics and modern science. The method used is participatory, involving students and the community in all stages of the activity, from planning, implementation, to evaluation. The activities included discussions, workshops, and the practical application of dialectical models in the context of Islamic economics. The results showed that the program succeeded in improving students' insights into the relationship between science and religion. They became more critical in analyzing Islamic economic issues and more open to the integration of science with Islamic values. Evaluation using questionnaires and observation showed an increase in students' understanding of dialectical models, as well as their ability to apply these concepts.

Keywords: dialectic, integration, conflict, independence, dialogue

## INTRODUCTION

Higher education today has a big challenge in integrating modern science with religious values, especially in the discipline of Islamic economics. As one of the economic studies based on Islamic values, Islamic economics not only emphasizes the scientific aspects of economics, but also carries ethical and moral values derived from Islamic teachings. This certainly requires a deep understanding of the relationship between science and religion, which is often viewed from various dialectical model perspectives.

State Islamic University (UIN) KH Abdurrahman Wahid Pekalongan, as an Islamic-based higher education institution, has a strategic role in developing students' understanding of the relationship between science and religion. Students of the Islamic economics study program are not only expected to understand economic concepts academically, but also to be able to apply Islamic principles in economic practice more broadly. This is where the importance of introducing and improving students' understanding of various dialectical models of science and religion. By understanding these dialectical models, students are expected to be able to address and position themselves wisely in connecting the scientific knowledge they learn with the religious principles they believe in. (Huda, 2017).

There are four main models in the dialectic of science and religion: conflict, independence, dialog, and integration. The conflict model assumes that science and religion are two conflicting entities that are difficult to unite. On the other hand, the independent model sees science and religion as two non-overlapping domains, which can coexist without affecting each other. Meanwhile, the dialog model seeks to find common ground between the two to create a complementary understanding. Finally, the integration or integrity model proposes an approach in which science and religion are seen as two components that must work together to form a complete knowledge.

- a. Conflict Model: This model views science and religion as two entities that cannot be harmonized because of their different views and approaches to truth. Proponents of this model often see scientific theories and religious teachings as contradictory. For example, the debate between the theory of evolution in biology and the account of human creation in various scriptures is an example of a debate that is in line with the conflict model view.
- b. Independent Model: This model assumes that science and religion have different and non-overlapping domains, so they can coexist without interfering with each other. Science focuses on empirical aspects and natural phenomena, while religion deals with spiritual, moral and metaphysical dimensions. With this perspective, science and religion are considered to go hand in hand without causing conflict.
- c. Dialogue Model: This model emphasizes the importance of communication and dialogue between science and religion, with the aim of achieving a deeper understanding. Through dialog, science and religion can find

common ground that enriches each other, creates openness, and offers a more comprehensive perspective on reality.

- d. Integration Model: This model proposes an approach where science and religion are seen as two components that need to complement each other and work together to understand the truth as a whole. It seeks to unite the scientific outlook with religious values in an overarching framework, where science can inform religion, and religion provides moral direction for the application of science.

An in-depth understanding of these dialectical models is essential for Islamic economics students at UIN KH Abdurrahman Wahid Pekalongan. With the various challenges of globalization and rapid technological development, students are faced with an ever-growing flow of information and economic theories, which sometimes contradict the principles of sharia. In this context, an understanding of the relationship between science and religion is not only an academic necessity, but also a foundation in forming a critical and wise attitude when facing contemporary issues in economics. Without an adequate understanding of how science and religion can interact harmoniously, students may find it difficult to harmonize Islamic values in modern knowledge-based economic practices. (Ameliola & Nugraha, 2014)..

This service activity aims to help Islamic economics students at UIN KH Abdurrahman Wahid Pekalongan in understanding the dialectical models of science and religion. Through this activity, students are expected to be able to identify the most relevant and applicable dialectical model for them, so that they can position themselves appropriately in facing the dynamics between science and religion. In addition, this activity is also expected to provide a deeper understanding for students on how to integrate the concepts of economics with Islamic values, so as to create a more holistic approach to economics and in line with religious teachings.

This activity focuses on the theoretical presentation and discussion of dialectical models of science and religion that have been widely discussed by philosophers of science, including Ian G. Barbour, who is famous for his theory of four models of the relationship between science and religion. Barbour explains that the conflict model often arises in history when science and religion compete for authority over the understanding of the universe, such as the case of the debate between evolution and creation theories. On the other hand, the independent model is popularized by scientists who believe that science and religion can walk on parallel paths without necessarily clashing with each other. The dialog and integration model, which is more constructive, is widely applied in an effort to bring scientific and religious understanding closer together, especially in the modern context where science and religion are expected to collaborate in facing humanitarian challenges.

By introducing these models, it is hoped that Islamic economics students will not only understand the differences, but also the advantages and disadvantages of each model. For example, by understanding the

conflict model, students can be more critical in addressing issues that are seen as contrary to religious teachings. Meanwhile, through the dialog and integration model, students will be more open to seeing that science and religion can go hand in hand and support each other. In the context of Islamic economics, this understanding is very important because students will learn how to apply rational and logical economic principles without having to contradict sharia. (Suriyati, 2020).

This service activity also aims to foster student awareness that science and religion can be understood from a dynamic and non-rigid perspective. In this increasingly complex and interrelated world, students need to have flexibility of thought that allows them to think critically, analytically, and reflectively in integrating economic science with Islamic principles. With a good understanding of the dialectical models of science and religion, students are expected to have a strong foundation to dialogue with various parties, both inside and outside the Islamic academic environment, and be able to utilize the knowledge they learn for the benefit of society. (Inayah et al., 2024).

Thus, this article is expected to be an academic contribution in efforts to integrate science and religion among Islamic economics students, especially at UIN KH Abdurrahman Wahid Pekalongan. In addition to enriching the repertoire of knowledge, a deep understanding of the dialectics of science and religion also has the potential to shape students into knowledgeable and pious individuals who are ready to contribute to an increasingly complex and challenging economic world.

## **METHOD**

The method that will be used in this service activity is a lecture approach and interactive discussion. The activity begins with the delivery of material on dialectical theories of science and religion, which includes a basic understanding of the relationship between the two as well as various integration models that have been developed by scholars. Then, group discussions were held to dig deeper into students' understanding of the application of these models in Islamic economic studies. (Miftah, 2017).

In addition, there will be question and answer sessions and case studies that allow students to directly examine the application of the dialectical model of science and religion in the context of Islamic economics. Thus, students will not only receive theory, but also be able to practice the concept in their daily lives, especially in facing sharia economic challenges and problems. This activity is expected to make a significant contribution in improving the understanding of Islamic Economics students about the relationship between science and religion, as well as strengthening their capacity to apply these principles in academic and practical contexts.

## RESULTS AND DISCUSSION

### Description of Service Activity Planning

A community service program aimed at strengthening the integration and interconnection of Islamic Economics students at KH Abdurrahman Wahid State Islamic University (UIN) Pekalongan is designed to improve their understanding of dialectical models of science and religion. This program is an effort to deepen students' ability to apply Islamic economic theory in a practical context in the community. In planning this activity, several main stages were arranged as a foundation for achieving the service objectives, including:

#### 1. Needs Identification

The activity began with a survey of the needs of students and the community around the campus to identify areas that require intervention and find out how Islamic Economics students can contribute effectively. The survey results showed that an understanding of the dialectical model of science and religion is very important for students, especially in dealing with actual issues involving aspects of Islamic economics.

#### 2. Formation of Community Service Team

The community service team is formed by involving supervisors and students. This team has the responsibility to ensure the smooth running of every stage of community service activities, from planning, implementation, to evaluation. The formation of this team also aims to create a collaborative environment that allows students to learn practically from lecturers and also play a direct role in social activities.

#### 3. Work Program Preparation

The work program was developed based on the results of needs identification and designed to include various activities, such as workshops, training, seminars, and field practice. The main focus of this program is on understanding and applying Islamic economic principles related to dialectical models of science and religion. The program was created to help students understand concepts such as conflict, independence, dialogue, and integration, as well as their application in the context of Islamic economics.

#### 4. Budget Setting

A budget is prepared to support the implementation of the program, including logistical needs, teaching materials, and honorarium for resource persons. The source of funds comes from campus support and several related partners, who participate in supporting this activity as a form of concern for the advancement of Islamic economic education in the community.

#### 5. Cooperation with External Parties

In order to broaden the scope of the impact of the activities, cooperation is established with government agencies, non-governmental organizations, as well as the private sector that has an interest in the field of



Islamic economics. This cooperation aims to provide practical insights from the real world to students, so that they can understand how Islamic economic principles are applied in the work environment.

### **Implementation of Service Activities**

The service activity was carried out for two days at the UIN KH Abdurrahman Wahid Pekalongan campus. The implementation of the activity was divided into two main stages:

#### 1. First Presenter: Introduction to Conflict and Independent Models

Students are introduced to two models of the dialectic of science and religion: conflict and independence.

- **Conflict Model**

Students learn about the conflict model, which views science and religion as two things that are often in opposition. Examples of the conflict model are explained through cases involving historical conflicts between science and religion, such as in the case of Galileo Galilei. Students are also encouraged to discuss Islamic economic issues that may conflict with the conventional economic system, such as the debate over bank interest.

- **Independent Model**

The independent model is explained as a model that considers science and religion to be on their own paths and do not need to influence each other. In this session, students were asked to analyze the role of Islamic economics that can run without having to be influenced by conventional economic systems that are not in accordance with religious principles.

#### 2. Second Presenter: Introduction to the Dialogue and Integration Model

activities focused on the other two models, namely dialogue and integration, which emphasize the positive relationship between science and religion.

- **Dialogue Model**

Students learn that dialog between science and religion can enrich each other. In the context of Islamic economics, the dialog model is applied to show how modern economic science can enrich Islamic economic principles. Examples given are the application of zakat and waqf as solutions to social and economic problems.

- **Integration Model**

In the last session, students were introduced to the integration model, which considers science and religion can be brought together to create a more complete framework of knowledge. An applicable example is given in the application of maqasid sharia, which is the main foundation of Islamic economics in achieving humanitarian goals, such as social justice and economic welfare.



**Figure 1: Material introduction**

After the speaker explained the material, students were asked to fill out an evaluation questionnaire to assess their understanding of the material presented and provide input on teaching methods.

### **Evaluation of Service Activities**

Evaluation was carried out to assess the success of the activity as well as the impact on students' understanding of the dialectic of science and religion in the context of Islamic economics. The following are some of the evaluation methods used:

#### **1. Analysis of Student Understanding and Feedback Questionnaires**

Based on the questionnaire results, most students stated that they gained new insights into the interaction of science and religion, especially in the field of economics. They also recognized the importance of understanding these dialectical concepts in order to deal with complex economic problems.



#### **Questionnaire and student feedback**

#### **2. Behavioral Observation and Participation**

During the activity, the service team conducted observations to assess the enthusiasm and participation of students in discussions and simulations. Observations showed that students were active and enthusiastic in

discussions, especially in discussing issues relevant to sharia economic practices. This indicates that the participatory method used succeeded in attracting student interest.

### 3. In-depth Interview with Selected Students

Some selected students were interviewed in depth to evaluate the impact of the activity on their understanding. Most students stated that they were better able to apply the concept of dialectics of science and religion critically and applicatively, especially in the analysis of Islamic economic policies.

### 4. Accompanying Lecturer Assessment

Lecturers who assisted the activities provided an assessment of the effectiveness of these activities. They generally stated that the program provided practical guidance for students on the application of religious knowledge and values. Lecturers suggested that activities like this should continue to be implemented to deepen students' understanding and improve their practical skills.

### 5. Analysis of Student Learning Outcomes

Student learning outcomes were analyzed through an evaluation test at the end of the activity. Based on the analysis, there was a significant increase in students' understanding of the dialectical models of science and religion. Students were able to answer questions regarding the application of these models well, indicating that they had understood the material more deeply.

## CONCLUSION

### Conclusion

Service activities that focus on increasing the understanding of Sharia Economics students of UIN KH Abdurrahman Wahid Pekalongan on dialectical models of science and religion make a positive contribution in understanding the relationship between the two. With the introduction of four main models - conflict, independence, dialog, and integration - students gain a broader perspective on how science and religion can be positioned in the academic and practical realms. This understanding is crucial for Islamic economics students who are faced with the challenge of applying economic science without ignoring sharia principles. This service not only improves students' theoretical understanding, but also builds a critical and thoughtful attitude in addressing contemporary economic issues.

### Advice

In order for the impact of this activity to be sustainable, it is recommended to develop it in the form of a sustainable training program involving more stakeholders, such as academics, Islamic economic practitioners, and religious leaders. In addition, it is important for the campus to make the dialectic of science and religion

part of the core curriculum in the Islamic Economics study program. This approach can strengthen students' theoretical and practical foundation, and prepare them to face the challenges of sharia-based economics in the future.

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## HARMONIZATION OF SCIENCE AND RELIGION, CREATING HARMONY IN THE WORLD OF EDUCATION

**M. Fikri Ardianto**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0007-7030-2556>

### Abstract

The harmonization of science and religion has become a relevant topic in the world of contemporary education, where the two are often seen as two opposing dimensions. However, with the right approach, the two can be seen as complementary aspects, offering a more comprehensive understanding of the world and human existence. This article discusses the importance of harmonization of science and religion in the educational context, with a focus on how both can be integrated in the educational curriculum to create harmony in the intellectual, moral and spiritual development of students. Through this approach, science is not only taught as empirical knowledge, but also as a means of strengthening religious values which can provide deeper meaning in everyday life. Thus, education that prioritizes harmonization between science and religion is able to form individuals who are not only academically intelligent, but also ethical and have a deep spiritual understanding.

**Keywords:** Harmonization, Science, Religion, Education, Harmony, Spiritual Values.

## ANALYSIS OF SHARIA ECONOMIC LAW DISPUTE CASES

**Muhammad Zaky MARDIKA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0008-7618-4949>

### **Abstract**

This article discusses the case of Bank Syariah Indonesia (BSI) customer data leak which occurred in May 2023 due to a ransomware attack by the LockBit group. This data leak of 15 million customers reflects a serious violation regarding the protection of personal data, which is contrary to the principles of Sharia Economic Law, especially the rules of trust and responsibility in maintaining data confidentiality and security. This case also involves the Personal Data Protection Law (UU PDP) which, although not yet fully enforced at the time of the incident, remains an important legal reference in ensuring information security. The analysis is carried out through two main perspectives: legal positivism, which highlights violations of formal rules even though the PDP Law is not yet fully active, and sociological jurisprudence, which emphasizes the social impact in the form of people's anxiety about the security of their personal data. This article highlights the importance of effective legal implementation, transparency, and strengthening public trust in the sharia economic system to protect consumer rights, maintain the reputation of financial institutions, and prevent similar violations in the future.

**Keywords:** Sharia Economic Law, Data Leaks, Bank Syariah Indonesia, Personal Data Protection, Legal Positivism, Sociological Jurisprudence, Trust, Public Trust.



**SHARIA ECONOMY DRIVES TRANSFORMATION OF INDONESIAN AND GLOBAL ECONOMY****Muhammad Reza KURNIAWAN****Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia****ORCID ID: <https://orcid.org/0009-0003-1624-734X>****Abstract**

Islamic economics and finance is seen as a key driver of global economic transformation, including Indonesia, by offering an inclusive, sustainable business model that has a positive impact on people's welfare. Senior Deputy Governor of Bank Indonesia, Destry Damayanti, highlighted the important role of economic sharia in addressing global issues such as economic inequality, climate change, and economic instability. In Indonesia, the potential for growth in the Islamic economy is increasingly driven by the majority Muslim population and the digitalization trend, which increases access to Islamic banking services, investments, and zakat activities. In addition, the sharia economy based on sharia compliance values is expected to experience significant growth, with spending related to sectors such as food, fashion, and travel expected to exceed US\$3 trillion by 2027. The 2024 Java Sharia Economic Festival, as part of the series leading up to the 2024 Indonesia Sharia Economic Festival (ISEF), is an event to develop a halal product ecosystem, empower sharia micro, and optimize zakat, infaq, sedekah, and waqf funds.

**Keywords:** Sharia Economic Law, Data Leaks, Bank Syariah Indonesia.

## OPTIMIZATION OF E-COMMERCE FOR SHARIAH ECONOMIC GROWTH IN THE ERA OF TECHNOLOGY 5.0

Fika DEALOVA

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID : <https://orcid.org/0009-0009-3830-3932>

### Abstract

This study aims to explain about Optimizing E-Commerce for Sharia Economic Growth in the Era of Technology 5.0. The era of technology 5.0 presents various opportunities to integrate e-commerce with sharia principles to encourage equitable, inclusive, and sustainable economic growth. This study uses a literature review method, which is carried out by collecting, reviewing, and analyzing various relevant literature on e-commerce and sharia economics sourced from books, journals, and scientific articles. The results of the study show that e-commerce plays a significant role in strengthening the sharia economic sector, especially through the development of the halal market, increasing financial inclusion, and the competitiveness of sharia-based business actors. Technologies such as artificial intelligence (AI), big data, and the Internet of Things (IoT) enable more transparent and efficient transaction management, in accordance with sharia principles. In addition, e-commerce is able to open wider market access for sharia-based MSMEs, increase consumer awareness of halal products, and create new opportunities in the sharia financial sector such as fintech. However, this study also found a number of significant challenges, including low digital literacy among sharia business actors, low consumer trust in digital platforms, and the need for regulations that can accommodate technological developments while still adhering to sharia principles. By overcoming these challenges, optimizing e-commerce has great potential to become the main driver of sharia economic growth that is not only economically profitable but also brings blessings in the era of technology 5.0.

**Keywords:** E-commerce, Sharia Economy, Technology 5.0, Halal Market, Financial Inclusion.

## INSPIRING THE YOUNG GENERATION: SHARIA FINANCIAL LITERACY WITH UIN SYARIF HIDAYATULLAH JAKARTA AND PRUDENTIAL

**Maia Salsa NURFARADISA**

**Faculty of Islamic Economics and Business,**

**K.H. Abdurrahman Wahid State Islamic University Pekalongan, Indonesia**

**ORCID ID: <https://orcid.org/0009-0002-6083-9492>**

### **ABSTRACT**

The seminar titled “Inspiring the Young Generation: Sharia Financial Literacy with Syarif Hidayatullah State Islamic University Jakarta and Prudential” aims to increase the younger generation's understanding of the concept of sharia finance while encouraging financial inclusion based on sharia principles. This collaboration between the Syarif Hidayatullah State Islamic University Jakarta and Prudential Sharia is a strategic step in dealing with the low level of Islamic financial literacy among the younger generation, despite the huge potential of the Islamic financial market in Indonesia. Through this seminar, participants, especially students, gained insight into the importance of sharia financial planning to build a more financially stable future. The materials presented included the basics of sharia finance, differences with conventional financial systems, and the role of the younger generation in supporting the growth of the sharia economy in Indonesia. In addition, speakers from Syarif Hidayatullah State Islamic University Jakarta academics and Prudential Sharia practitioners provided examples of the real application of sharia finance in everyday life, including investment, insurance, and zakat management. This activity is expected to build collective awareness and motivate the younger generation to contribute to the development of an inclusive and sharia value-based financial system. With an interactive approach, the seminar succeeded in creating a productive dialog between academics, practitioners, and students as the next generation. This initiative is also part of a shared commitment to make the Islamic financial system more inclusive and value-based.

**Keywords:** Islamic finance, financial literacy, young generation, financial inclusion, and prudential sharia.

### **Introduction**

Islamic finance has become one of the fastest growing sectors in Indonesia, given that the majority of the population is Muslim. However, the level of Islamic financial literacy and inclusion among the younger generation is still relatively low. This shows the need for wider and more systematic education on the concepts,

benefits and implementation of Islamic finance. The seminar titled “Inspiring the Young Generation: Sharia Financial Literacy with Syarif Hidayatullah State Islamic University Jakarta and Prudential” comes as one of the efforts to overcome this challenge.

The collaboration between Syarif Hidayatullah State Islamic University Jakarta and Prudential Sharia shows the synergy between academics and practitioners in providing in-depth understanding to the younger generation. The focus of this seminar covers the basics of sharia finance, the differences with conventional financial systems, to real applications in everyday life, such as sharia insurance and zakat management. With an interactive approach, the seminar is expected to raise awareness and motivate the younger generation to take an active role in supporting the growth of the Islamic economy in Indonesia.

### **Result and Discussion**

The seminar entitled “Inspiring the Young Generation: Sharia Financial Literacy with Syarif Hidayatullah State Islamic University and Prudential” succeeded in improving the understanding of participants, especially the younger generation, regarding the concept of sharia finance. Most of the participants stated that they better understand the differences between sharia and conventional financial systems, as well as the benefits of applying sharia principles in financial management. Interactive discussions involving speakers from Syarif Hidayatullah State Islamic University Jakarta and Prudential Sharia provided space for participants to ask direct questions and further explore the real-life applications of sharia finance, such as sharia insurance and zakat management. In addition, the case studies provided helped participants understand the challenges and opportunities in practicing Islamic finance in everyday life.

Prudential Sharia’s involvement as a practitioner provided insight into Islamic financial products that are relevant to the needs of modern society. The enthusiasm of the participants was evident from the high level of participation during the Q&A session, showing that the younger generation has a keen interest in exploring and contributing to the development of Islamic finance in Indonesia. These results show that a collaborative approach between academics and practitioners is very effective in improving Islamic financial literacy, while encouraging active participation of the younger generation in supporting inclusive and sustainable Islamic economic growth.

### **Methods**

The seminar “Inspiring the Young Generation: Sharia Financial Literacy with Syarif Hidayatullah State Islamic University Jakarta and Prudential” uses a participatory approach that involves academics, practitioners, and participants, especially students. The method applied included three main stages.

1. Presentations by speakers from the Syarif Hidayatullah State Islamic University Jakarta and Prudential Sharia. They presented material on the basics of Islamic finance, differences with conventional financial systems, and the application of Islamic finance in everyday life, such as Islamic insurance and zakat management.
2. Interactive discussion, where participants were given the opportunity to have a direct dialog with the speakers. This session was designed to answer participants' questions and deepen their understanding of the topics discussed.
3. Case studies, where participants are invited to analyze and find solutions to real problems faced in the implementation of Islamic finance. This method helped participants understand the practical context of the theories they had learned. With this approach, the seminar succeeded in creating a productive and in-depth dialog.

### **Conclusion**

The seminar “Inspiring the Young Generation: Islamic Financial Literacy with Syarif Hidayatullah State Islamic University Jakarta and Prudential” succeeded in improving Islamic financial literacy among the younger generation. The collaborative approach between academics and practitioners enabled participants to understand the concepts, benefits, and implementation of Islamic finance in their daily lives. The results showed that participants better understood the differences between sharia and conventional financial systems and were motivated to support economic growth based on sharia values. With the continuation of similar educational programs, Islamic financial literacy and inclusion in Indonesia has the potential to increase, strengthening an inclusive and sustainable financial system in accordance with Islamic principles.

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Maia Salsa NURFARADISA

Faculty of Islamic Economics and Business,

K.H. Abdurrahman Wahid State Islamic University Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0002-6083-9492>

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Prudential Sharia’s involvement as a practitioner provided insight into Islamic financial products that are relevant to the needs of modern society. The enthusiasm of the participants was evident from the high level of participation during the Q&A session, showing that the younger generation has a keen interest in exploring and contributing to the development of Islamic finance in Indonesia. These results show that a collaborative approach between academics and practitioners is very effective in improving Islamic financial literacy, while encouraging active participation of the younger generation in supporting inclusive and sustainable Islamic economic growth.

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Financial Services Authority (OJK). (2022). National Strategy for Sharia Financial Literacy. Jakarta: OJK.



## IILM'S ROLE IN STRENGTHENING SHARIA FINANCIAL LIQUIDITY THROUGH SUKUK

**Kamilah FIDINI**

**Faculty of Economics and Business, UIN K.H. Abdurrahman Wahid Pekalongan**

**ORCID ID : <https://orcid.org/0009-0007-5298-9040>**

### **Abstract**

Bank Indonesia continues to strive to strengthen the sharia financial market in response to global economic uncertainty. One of the strategies implemented is to partner with Islamic International Liquidity Management (IILM) and the Islamic Financial Services Board (IFSB). This collaboration aims to increase liquidity and stability in the Islamic financial system. In the 2024 Indonesia Sharia Economic Festival (ISEF), IILM CEO, Mohamad Safri Shahul Hamid, explained various innovations to encourage more effective liquidity management and support the development of the sharia financial industry. One of the main innovations carried out by IILM is the issuance of sukuk or short-term sharia bonds on a regular basis every month. This sukuk aims to provide a liquidity instrument which has been a challenge in the Islamic financial market. This step not only strengthens the liquidity of Islamic financial institutions but also helps Islamic banks meet their operational needs. IILM is also expanding its services to less developed markets to reduce gaps in liquidity management. In addition, IILM focuses on increasing capacity and asset growth in the Islamic financial sector. This effort is expected to be able to create better stability and sustainability, as well as make Islamic finance more competitive at the global level.

**Keywords : Islamic finance, sukuk, liquidity, global markets, sharia banking, financial innovation.**



## IMPACT OF THE GENDER OF TOURISTS ON THE WILLINGNESS WITH THE INBOUND TOURISM IN INDIA

**Dr. Chems Eddine BOUKHEDIMI**

**ORCID: 0000-0003-1728-1809**

[chemsrko@gmail.com](mailto:chemsrko@gmail.com)

**University of Tizi Ouzou, Department of commerce. Marketing Management. Algeria**

### **Abstract**

Using the Chi-square test and cross tables, this paper aims to examine the effect of gender on the willingness for the inbound tourism. Random sampling technique was used to select the sample respondent.

The research is based on an online survey that was done between July 9, 2023, to January 26, 2024. The data was collected from 106 sample respondents in the study area between 87.7 % are Indians.

The results obtained show that there are not a significant differences between men and women in terms of willingness for inbound tourism in India (p-value:  $0.224 > 0.05$ ).

**Keywords:** Tourism; Tourists; inbound tourism; India; gender, chi-square test; SPSS.

## SATISFACTION WITH THE DELIVERY TIME: GENDER BASED-STUDY AMONG ALGERIAN E-SHOPPERS

**Dr. Chems Eddine BOUKHEDIMI**

**ORCID: 0000-0003-1728-1809**

[chemsrko@gmail.com](mailto:chemsrko@gmail.com)

**University of Tizi Ouzou, Department of commerce. Marketing Management. Algeria**

### **Abstract**

Using the Chi-square test and cross tables, the present study aims to check the satisfaction between men and women regarding their satisfaction toward the delivery time among 182 Algerian e-shoppers. The research is based on an online survey that was done between July 20, 2023 and January 27, 2024. Moreover, the study explored SPSS version 26.

Indeed, it has been demonstrated that the p-value is superior to the significant level (p value:  $0.554 > 0.05$ ), which means that the differentiation is not found between gender of respondents regarding the delivery time' satisfaction..

**Keywords:** Online shopping; Algeria; e-consumer; e-commerce 'satisfaction; e-satisfaction; chi-square test; SPSS.

## THE IMPACT OF PETROL PUMP PRICE DEREGULATION IN SHAPING REMOTE WORK AND VIRTUAL TEAMS: IMPLICATIONS FOR HUMAN RESOURCE MANAGEMENT (HRM)

**DR CHUKWUEMEKA GODSON EME (PhD), 1; MOHAMMED BAPPAH, 2**  
**1, Lecturer, Department of Business Administration, Faculty of Management Sciences;**  
**2, PhD Student, Department of Business Administration; Faculty of Management Sciences,**  
**National Open University of Nigeria (NOUN), Jabi-Abuja; Tel: +234, 1, 904, 992, 9862;**  
**803, 833, 5138; E-Mail(s): [ceme@noun.edu.ng](mailto:ceme@noun.edu.ng); [nou235012567@noun.edu.ng](mailto:nou235012567@noun.edu.ng)**

### Abstract

The Nigerian oil and gas sector plays a very dominant role in the nation's economy with over 90% in 2011 and 98% of the nation's foreign exchange (Ibanga, 2011; CBN, 2012). For several years now, the Nigerian State has pursued the policy on strategic deregulation of the downstream sector of the petroleum products. Specifically, between 1978 and 2012, we have had 17 petroleum product price adjustments. This has led to increases in pump price of premium motor spirit (PMS). Remote work has significantly altered the landscape of various industries, including the traditionally onsite-dependent oil and gas sector. The advent of remote work and virtual teams has ushered in a paradigm shift across industries, challenging traditional notions of workplace culture, operational efficiency, and employee engagement in the Oil and Gas sector. This study examines the influence of remote work and virtual teams based on the recent incessant shifts and increments in petrol pump price deregulation and removal of oil subsidies by the current administration of President Bola Ahmed Tinubu since assumption of office in May, 2023. The researcher equally considered the implications of the deregulation in the downstream oil sector for Human Resource Management (HRM) practices. The survey methodology was adopted for this study. Primary data collection using the questionnaire and interview technique was adopted in collecting data from 230 respondents. This sample size was arrived at using a simple random sampling technique of 10% of total population of 2,300 employees of the study area. Tables were used in the presentation of the data while the mean ( $\bar{x}$ ) and standard deviation (SD) were used in the analysis of data. Cronbach alpha coefficient of 0.70, was adopted to test the reliability of the instrument used. The independent t-test was adopted to test the hypothesis for the study while the SPSS Version 26 was utilized in further analysis of study data. The study revealed that corruption brought about by petroleum subsidy removal is obvious in the petroleum industry and that importation of petroleum products to meet local demand by Nigerians is attributable to leadership/managerial problems.

**Keywords:** Petrol-pump Price, Deregulation, Remote Work, Virtual teams, Human Resource Management (HRM)



## 1.1 Introduction

Deregulation of petroleum product is the absence of control or regulation on the pricing of petroleum products. It involves the government's leaving the determination of prices of petroleum products to the interaction of the forces of demand and supply, which removes subsidy and encourages competition, efficiency and increase output in the petroleum industries (Umoru, 2000). Deregulation pre-supposes market forces as the determinant of prices rather than a decision to fix prices by administrative fiat. In Nigeria, it explains the process of freeing the federal government of concurrent control and involvement in the business of refining, importation and distribution of refined petroleum products in the Nigerian market.

Deregulation is therefore the policy that ends rigid government regulation of economic activities and allows private investors competition and market forces to determine the prices of services and products (Ayodele, 1994). It implies private participation in a country's economic activities which ensures competitive economic activities devoid of monopoly and permits price mechanism of demand and supply principle of the economy to prevail. The main objectives of deregulation include the introduction of market economy; increasing economic efficiency; establishing democracy and guaranteeing political freedom as well as increasing government revenue (Dhaji and Milanovic, 2019).

Leaders employ different skills and styles to bring out the best in their teams. The COVID-19 pandemic created new ways for most business teams to work, complicating a critical change in conducting business (Benishek & Lazzara, 2019). Company leaders during the pandemic were forced to send their workers home to work, which took the form of virtual teams defined broadly as people who share a common goal and work remotely from the office in any geographical location with internet or phone service (Vakilian & Edrisi, 2020). Although the use of virtual teams is not a new phenomenon, many organizations have increased their engagement with virtual approaches in recent decades, as work has become increasingly multinational and global (Garro-Abarca et al., 2021).

Teams who work and collaborate remotely create a diverse and dynamic workforce. The continuous implementation and development of technology has dramatically shifted how people work (Graves & Karabayeva, 2020), with the digital age causing rapid changes in business processes, companies have had to adapt quickly in order to remain relevant and to survive in a global market (Garro-Abarca et al., 2021).

Although the term virtual team first appeared in 1992, virtual teams represent a "paradigm shift" in the beginning of the 2020s (Gibson et al., 2021. p.2). Companies including IBM Corp., Shell Oil Co., Microsoft Corp., and Accenture Ltd. use virtual teams to allow groups of workers, in various locations and time zones, to work collectively to achieve certain outputs (Gibson & Grushina, 2021). Virtual teams use technology not only

to complete tasks with increased employee flexibility, but also to maximize the benefits of different time zones, reduce costs, and potentially change business strategy (Gibson & Grushina, 2021; Gibson et al., 2021). These factors make working in and managing a virtual team different from a traditional face-to-face team.

The unique nature of virtual teamwork produces specific challenges not commonly experienced by face-to-face teams. To remain productive in a virtual environment, business leaders must build and maintain trust, foster open communication, and use other interpersonal skills to ensure a successful team culture with limited face-to-face cues (Alward & Phelps, 2019). Poor communication skills, unforeseen technology problems, cultural difference, lower levels of trust or support, and lack of personal connection are just some of the challenges that leaders face when leading virtual teams, and these issues can be exacerbated by the lack of physical interaction within which the virtual space functions (Alward & Phelps, 2019; Newman & Ford, 2021; Zaharie, 2021). Research has shown that because virtual teams utilize technology to communicate, there are increased challenges of maintaining trust and sustaining optimal performance (Gibson et al., 2021). Thus, leading virtual teams is of considerable research interest in the contemporary organization. Accordingly, this study explores the strategies needed to lead virtual teams in organizations taking cognizance of the challenges posed by the petrol pump price deregulation of the downstream Petroleum industry and its implications for Human Resource Management (HRM) practice.

## 1.2 Statement of the Problem

Teams who work and collaborate remotely create a diverse and dynamic workforce. The continuous implementation and development of technology has dramatically shifted how people work (Graves & Karabayeva, 2020), with the digital age causing rapid changes in business processes, companies have had to adapt quickly in order to remain relevant and to survive in a global market (Garru-Abarca et al., 2021).

Although the term virtual team first appeared in 1992, virtual teams represent a “paradigm shift” in the beginning of the 2020s (Gibson et al., 2021, p.2). Companies including IBM Corp., Shell Oil Co., Microsoft Corp., and Accenture Ltd, use virtual teams to allow groups of workers, in various locations and time zones, to work collectively to achieve certain outputs (Gibson & Grushina, 2021). Virtual teams use technology not only to complete tasks with increased employee flexibility, but also to maximize the benefits of different time zones, reduce costs, and potentially change business strategy (Gibson & Grushina, 2021; Gibson et al., 2021).

The specific problem is that some business leaders lack strategies needed to lead virtual teams successfully, thereby producing a lack of trust among team members, decreasing employee-retention, and reducing organizational growth and profitability. The purpose of this study was to explore the strategies some leaders use to lead virtual teams successfully that improve trust and job performance, increase employee retention, and

enhance organizational growth and profitability. The study participants were drawn from selected top-Management team and other employees (staff) of the NNPC-Gas Marketing Limited.

### 1.3 Objectives of the Study

The main objective of this paper was to assess the impact of Petrol Pump Price Deregulation in shaping Remote Work and Virtual Teams: Implications for Human Resource Management. A Study of NNPC-Gas Marketing Limited. The specific objectives the paper sought to achieve are to.

- i. determine the impact of petrol pump price deregulation on remote work and virtual teams;
- ii. examine the benefits of remote work and virtual teams in the 21<sup>st</sup> century organizations;
- iii. evaluate the role of NNPC in the deregulation of petrol pump price in Nigeria;
- iv. assess the functions of NNPC-Gas Marketing Limited in the deregulation of petrol pump price in Nigeria;
- v. identify the implications of the variables (petrol pump deregulation, remote work and virtual teams) on the Human Resource Management (HRM) practice.

### 1.4 Research Questions

The following questions were set to be addressed by the study.

- i. To what extent does the petrol pump price deregulation impact on remote work and virtual teams?
- ii. What are the benefits of remote work and virtual team in the 21<sup>st</sup> century organizations?
- iii. What is the role of NNPC in the deregulation of petrol pump price in Nigeria?
- iv. What are the functions of NNPC Gas Marketing Limited in the deregulation of petrol pump price in Nigeria?
- v. To what extent does the study variables (petrol pump price deregulation, remote work and virtual teams) have implications for the Human Resource practice?

### 1.5 Research Hypotheses

The following statements were formulated in accordance with the research objectives, and will be tested at 0.05 Alpha level of significance.

**Ho1:** There is no statistically significant effect of petrol pump price deregulation on remote work and virtual teams.

**Ho2:** There is no statistically significant effect of the benefits of remote work and virtual teams on the 21<sup>st</sup> century organizations.

**Ho3:** There is no statistically significant effect of the role of NNPC on petrol pump price deregulation in Nigeria.

**Ho4:** There is no statistically significant effect of the functions of NNPC Gas Marketing Limited on deregulation of petrol pump price in Nigeria.

**Ho5:** There is no statistically significant effect of the implications of the study variables (petrol pump price deregulation, remote work and virtual teams) on Human Resource Management (HRM) practice.

### **1.6 Significance of the Study**

The result of the research is of importance to the management of the corporate organizations, the NNPC Gas Marketing Limited itself, and the staff and the government as well as the general public will also be interested in the result of the study. The NNPC Gas Marketing Limited itself will benefit from the result of the research as it will help them do self-assessment performance and identify where it may have to take corrective measures.

This study is significant in that the findings may be of value to businesses to help virtual team leaders improve their relationship with their virtual teams, which may lead to higher employee retention, job satisfaction, and improved job performance. The study may also contribute to the effective practice of business because virtual leaders and the strategies needed to be effective virtual leaders are still lacking in many organizations. Existing and new virtual team leaders can use this study's findings to potentially enhance or improve their strategies for building trust within their virtual teams. Finally, this study adds to the literature concerning the tools that leaders of virtual teams may use to improve success in virtual environments.

To the government, this research will be a ready tool and reference point for Policy makers and Legislators to enact effective and efficient policies for the regulation of remote work and virtual teams-practices for organizations

### **1.7 Scope and Limitation**

This study focuses on investigating the impact of Petrol pump price deregulation on remote work and virtual teams -implications for Human Resource Management (HRM), adopting a case study of NNPC Gas Marketing Limited. Despite the comprehensive approach of this study, there are several limitations that must be acknowledged. One significant limitation is the availability and quality of data from corporate organizations. The study relies on data from this organization which may vary in terms of transparency and reporting standards, particularly concerning their remote work and virtual team policy. This limitation could restrict the depth and accuracy of the analysis. Another limitation is related to the generalizability of the findings. The study focuses on a specific corporate organization (NNPC Gas Marketing Limited) which is a subsidiary of NNPC Limited, in charge of its gas marketing business.

## 2.0 Literature Review

### 2.1.1 Conceptualization of Virtual Teams

Although the term first appeared in 1992, virtual teams represent a ‘paradigm shift’ in the beginning of the 2020s (Gibson et al., 2021, p.2), Organizations including IBM Corp., Shell Oil Co., Microsoft Corp., and Accenture Ltd, use teams to allow groups of workers, in various locations and time zones, to work collectively to achieve certain outputs (Gibson & Grushina, 2021). Virtual teams use technology not only to complete tasks with increased employee flexibility, but also to maximize the benefits of different time zones, reduce costs, and potentially change business strategy (Gibson & Grushina; Gibson et al., 2021). These factors make working in and managing a virtual team different from a traditional face-to-face team.

The global COVID-19 pandemic has necessitated a rapid shift towards remote work practices across various sectors, including the traditionally on-site oil and gas industry. This transition has been marked by the adoption of digital technologies and innovative approaches aimed at maintaining operational efficiency, ensuring safety, and fostering employee engagement, despite the challenges of remote work environments. The advent of remote work has ushered in a paradigm shift across industries, challenging traditional notions of workplace culture, operational efficiency, and employee engagement. In the oil and gas sector, known for its stringent reliance on physical presence due to operational safety, and security requirements, the transition to remote work represents a significant cultural and logistical shift.

Virtual teams are defined as groups of employees, who collaborate primarily through electronic means, I.e. communications technology, and are dispersed by geography and time (e.g. Aubert and Kelsey, 2003; Bell and Kozlowski, 2002; Jarvempa and Leidner, 1999; Kirkman et al., 2002). The current conceptualization focuses on the geographical separation between team members and on their reliance on information and communication technology (Chudoba et al., 2005; Gibson and Gibbs, 2006; Gilson et al., 2015). Such technology can include text-based communication and audio media. Text-based communication can include emails and share points which are primarily used for knowledge sharing, updating, and documentation purposes. Audio media can include telephone calls (for fast interaction), on-line meetings (e.g. Lync and Skype which are mainly used internally); chatting (for asking simple questions and getting immediate answers), video conferencing, social networking, social platforms, discussion boards and virtual walls. Technology produces ever-more advanced, cost-effective, and sophisticated group-ware and ensures that virtual world environments are nowadays available to more people than ever before.

To define virtual teams, some researchers emphasize the nature of remote work versus co-location and use the term ‘remote teams’ (e.g. Kelley and Kellogan, 2012), while others consider the (geographical) distribution of

team members relevant and prefer using the concepts “distributed teams” (e.g. Bill and Bartol, 2015; Hinds and Cramton, 2014), or “dispersed teams” (e.g. Kitmoller et al., 2015). Most scholars use virtual, distributed, and dispersed teams almost as synonyms (e.g. Al-Ani et al., 2011). In the present study, the researcher would adopt the concept virtual team to mean teams that work primarily virtually (through technology) and include members who are distributed in different locations (and countries). More specifically, we will use the term global virtual team to refer to the global work typical of multinational organizations.

Global virtual teams (commonly abbreviated as GVTs) work across time and space as well as organizational and cultural boundaries. They are generally defined as groups of people who (1) work together using communications technology, (2) are distributed across space, (3) are responsible for a joint outcome, (4) work on a strategic or technically advanced task, and (5) are multinational and/or multicultural (e.g. Chudoba et al., 2005; Gibson and Cohen, 2003; Gibson and Gibbs, 2006; Zander et al., 2012). Managers who lead global teams need to ensure that the best individuals are available for a given task, such as developing new products and processes and running projects, have access to the same information, and can complete tasks quickly from their locations (i.e. home countries) typically close to the customers (see Dain et al., 2012; Jarvenpaa et al., 1998; Maynard et al., 2012; Maznevski and Chudoba, 2000). The typical size of these teams is 5-10 members, who work daily together to share information, define goals, follow-up team’s progress and support each other. In addition, members of global virtual teams are likely to represent different specialist functions and to have multiple reporting lines i.e. work in a matrix organization. Moreover, some scholars (e.g. De Paoli, 2015; Siebdrat, 2009) also use the term “hybrid teams”. These teams are dispersed on some level, temporally separated, or configuration-ally uneven. In this study, we would use the concept “global virtual team” although part of the teams may be hybrid, i.e. some team members work virtually and others are co-located.

Teams who work and collaborate remotely create a diverse and dynamic workforce. The continuous implementation and development of technology has dramatically shift in how people work (Graves & Karabayeva, 2020), with the digital age causing rapid changes in business processes, companies have had to adapt quickly in order to remain relevant and to survive in a global market (Garro-Abarca et al., 2021).

The unique nature of virtual teamwork produces specific challenges not commonly experienced by face-to-face teams. To remain productive in a virtual environment, business leaders must build and maintain trust, foster open communication, and use other interpersonal skills to ensure a successful team culture with limited face-to-face cues (Alward & Phelps, 2019). Poor communication skills, unforeseen technology problems, cultural differences, lower levels of trust or support, and a lack of personal connection are just some of the challenges that leaders face when leading virtual teams and these issues can be exacerbated by the lack of physical



interaction within which the virtual space functions (Alward & Phelps, 2019; Newman & Ford, 2021; Zaharie, 2021). Research has shown that because virtual teams utilize technology to communicate, there are increased challenges of maintaining trust and sustaining optimal performance (Gibson et al., 2021). Thus, leading virtual teams is of considerable research interest in the contemporary moment. Accordingly, this study explores the strategies needed to lead virtual teams, expanding the current literature with findings that can provide virtual leaders with a deeper understanding of the leadership strategies that can be used to successfully implement change within any organization.

### **2.1.2 Dimensions of Virtual Teams**

They have been a number of recent studies, which have focused on how best to structurally set up Virtual Teams from a leader and follower perspective. On review of the literature, it became apparent that there was an opportunity to complete further research specifically focusing on the challenges and opportunities to remote leadership. The following constructs are designed for virtual teams concept and would be discussed in further details here.

#### **2.1.2a Leadership**

Leadership, is a hugely popular topic of research, and is at the foundation of study on virtual teams. The word ‘‘lead’’ derives from the Anglo-Saxon meaning of a journey, road or a way. Therefore, leading is the moving of something or someone from one place to another or from one situation to another. Moving means a change so leadership implies a person or group who leads change. In the early 1970s, Ralph Stogdil carried out a comprehensive study which reviewed over 3,000 books and articles on the subject of leadership. The results of this study were published in a book titled: ‘‘The Handbook of Leadership’’ (Stogdil, 1974) and the author presents a number of topics that include: leadership theory, leadership personality and behaviour, leadership stability and change, emergence of the leadership role, leadership and social power, leader-follower interactions, leadership and group performance amongst others.

Jackson & Parry (2008) suggest that anyone who has been in a leadership role will understand that the act of leadership is considerably more challenging than talking, reading, writing or seeing leadership all put together. There is no doubt that one can learn the most about leadership from actually trying to lead. The basic challenge in the management of a virtual team is that of leadership. Managers must learn and adapt themselves with current tools and techniques of leadership to ensure that virtual team members and organizations achieves targeted goals and objective of setting them up in the first instance.

### 2.1.2b Globalization

The term ‘‘Globalization’’ from a business sense began in the early 1980s and can be defined as the integration of all world markets into a single market (Lane, 2000). The author of *Globalization: The Juggernaut of the 21<sup>st</sup> Century* also outlines that there are many advantages and disadvantages that come with global trade but many of these disadvantages can be addressed. Communication is one of the main barriers but continuous advances in technology has allowed organizations to create global team’s specific accountability for certain business activity. Globalization brings more choice and more diversity. The example provided by (Eskew, 2003) ‘‘Today, foreigners own half of America’s film studios, half of its top 20 publishing houses. Harry Potter, a British invention generated more revenue in the USA last year than McDonald’s did in the UK.

Hewlett Packard Ink-Jet manufacturing operations is a good example of this with Research and Development located in two global sites - Carvalis (USA) and Leixlip (Ireland), Global Procurement in Ireland, Manufacturing in Malaysia, Finance in Singapore and Accounts Payable situated in Bangalore (India). Each of these functions operate as Global Virtual Teams (GVT). Multiple books on the subject of Virtual Teams have been published such as ‘‘Mastering Virtual Teams’’ (Duarte & Snyder, 1999) in which the author suggest strategies, tools and techniques that organizations need to implement for success. This is further developed by the authors of ‘‘Multinational work teams’’ (Earsley & Gibson, 2002).

### 2.1.2c Technology

Technology continues to have a major impact on society, organizations, and our daily life. The effects of Information and Communication Technologies (ICTs) in particular are contributing greatly to globalization, innovation, growth and productivity, It is suggested by (Bohlin, Levin, Sung, & Chang-Ho Yoon, 2004) that ICTs have made it easier for multinationals and other companies to spread production facilities all over the world, to co-ordinate international marketing campaigns, and to ease collaboration in projects, taking place on different continents. Abe and Chowdhury (2012), explains that there is no digital divide and by this they mean that all individuals no matter what jib type, employed or not – now have access to the same information and knowledge previously available to only a selected few. While technology will help you stay connected, the truly successful virtual business knows how and when to interact remotely with employees and clients. It is not something everyone can do successfully and requires a particular skill set which requires employees to be able to work with minimum supervision be honest and who can deliver work on time to the required standard. Those employees who need constant motivation and a proper office environment may nit be suitable for Global Virtual Teams (GVT) and technology has not yet bridged this gap.

### 2.1.2d Virtual Workplace

Global virtual teams (GVT) are “geographically and/or organizationally dispersed” and using a combination of telecommunications and information technology to achieve an organizational tasks” (Townsend, DeMarie, & Hendrickson, 1998) geographically separated and rarely meet face to face. There are a number of advantages to GVTs and cost savings is the main one as many global organizations can reduce real estate and utility costs. It also allows organizations to take advantage of more competitive production costs, operational costs and lower wages for employees in these geographical locations ((Avolio & Jahai, 2003). A second advantage of GVT allows an organization to avail itself of experts and specialists-talent that is limited or not present within their own country. As technology has advanced it is creating greater opportunities for people who require a more flexible working arrangement and more jobs do not require a physical presence in the workplace. There are some disadvantages also, considering the cost of technology can be reduced it is still a sizable cost to organizations to provide GVTs with the technology required for them to function. Other challenges can be related to a lack of trust between virtual team members, caused by the absence or limited face-to-face time between a team which is precipitated by the absence of non-verbal cues. Organizations such as Hewlett Packard, IBM and Microsoft are actively trying to overcome disadvantages by exploring new leadership approaches and developing technology to give more effective communication strategies.

Virtual workplace can be defined as an organization whose work is completed in full or in part via electronic communication and requires:

- > Minimal or no daily face-to-face contact with co-workers or leaders
- > Technology such as Skype, Tele/Video conferencing, computer etc.
- > An environment without geographical boundaries

The Virtual workplace is different to that of the traditional work environment as these workplaces frequently operate in multiple locations. Business is carried out through email, internet and video. Employees within the organization communicate with each other through technology, staff are communicating with their clients or customers remotely as often each party are based in different time zones. Yukl (2003), supports this stating that there are a number of factors such as increased pace of globalization and the need to have joint ventures coupled with the fact that many employees require better work life balance. Virtual workplaces can also be classified as employees working from the home or any “public hot spots” such as cafes, and hotels (Cole, Oliver, & Blaviesciunaite, 2014).

In summary, it is not uncommon for organizations to have as many as 50 percent of employees now working on or involved in virtual teams. Advances in technology have made it easier to organize and manage dispersed

employee groups. Hewlett Packard like many other organizations are under major cost pressures as they continue to expand into global markets and utilization of virtual teams is helping meet this cost in the short term but unfortunately deciding to implement a virtual strategy does not guarantee success as many organizations are now reporting to have virtual teams that are ineffective.

### 2.1.3 Concept of Remote Work

The concept of remote work, once a novel idea, has transformed into a fundamental component of the modern workforce, reshaping organizational structure, work-life-balance and employee expectations. This literature review explores the evolution of remote work, tracing its historical roots, examining the technological advancements that have facilitated its growth, and analyzing the societal changes that have influenced its widespread adoption.

Historically, remote work can be traced back to the early 1970s when Jack Nilles coined the term "telecommuting" during the oil embargo crisis, proposing it as a solution to reduce reliance on fossil fuels (Nilles, 1975). Initially, remote work was limited by technology, with early adopters relying on basic telecommunications to perform their duties outside the traditional office. However, the concept laid the groundwork for a broader understanding and acceptance of working from locations outside the corporate environment.

The advent of the internet and subsequent technological advancements significantly propelled the remote work movement forward. The development of high-speed internet, cloud computing, and collaborative software tools in the late 20<sup>th</sup> and early 21<sup>st</sup> centuries removed many of the logistical barriers to remote work, enabling real-time flexible, agile workforce, capable of operating efficiently regardless of geographical constraints.

Societal changes have also played a crucial role in the evolution of remote work. The increasing demand for work-life-balance, coupled with a shift towards a more digital, interconnected world, has made remote work a desirable option for many employees. The COVID-10 accelerated this trend, forcing organizations worldwide to adopt remote work practices almost overnight. The pandemic highlighted the viability of remote work on a large scale, challenging preconceived notions about productivity and collaboration in a remote setting.

The impact of remote work on organizational culture, employee engagement, and productivity has been a subject of extensive research. Studies have shown that remote work can lead to increased productivity, higher job satisfaction, and reduced turnover rates, provided that organizations implement supportive policies and communication tools. However, challenges such as isolation, overwork, and the blurring of work-life-boundaries have also been identified.

The evolution of remote work is a testament to the adaptability and resilience of the workforce in the face of technological and societal changes. As organizations and employees navigate the post-endemic world, the lessons learned from the rapid expansion of remote work will undoubtedly shape future work practices, policies, and technologies.

An accurate and coherent definition of remote work poses a significant challenge for researchers and practitioners. While early examples of remote work and related studies demonstrate that the phenomenon is not entirely new, its theoretical conceptualization, evolution, and widespread implementation in the business and organizational context have a relatively short history. Consequently, existing literature exhibits a variety of concepts that are often used interchangeably, contributing to the complexity of the topic. These concepts include telework, telecommuting, working from home (WFH), and working from anywhere (WFA). Other related concepts are flexwork, distributed work, dispersed teams, virtual work, and many others. Although there may be subtle differences among these terms, remote work encompasses the broad spectrum of these concepts due to its comprehensive nature.

Theoretically, the most simplistic, inclusive and holistic definition of remote working is a work arrangement that allows employees to work outside of the traditional office environment, supported by various communication channels. The work environment can include working from home, a co-working space, or any other location.

Remote work can be considered a hallmark of neoliberal ideology, which aligns with the principles of individualism and market-driven approaches. This global perspective aligns with the belief in the unrestricted movement of labor and capital in search of market opportunities. Moreover, remote work reinforces the instrumental role of workers in the global market. In this framework, workers are seen as agents instrumental to achieving organizational goals and maximizing productivity, profitability and performance.

In response to the widespread adoption of remote work, many countries have implemented regulatory arrangements to establish operational definitions that clarify employers' obligations and ensure workers' rights and responsibilities. France, for instance, has distinct organizational approaches to telework for private sector and public-sector employees. In the private sector, the operational definition of telework is typically determined through collective agreements between employers and employee representatives. Consequently, the eligibility criteria and procedures for telework can vary between the public and private sectors. Similarly, in Spain, work is considered remote if at least one-third of the work is performed outside of the physical workplace within a three-month period. These examples demonstrate that while theoretical definitions offer a broad understanding

of remote work, the operational definition can differ significantly on the regulatory environment governing work activities.

#### **2.1.4 Dimensions of Remote Work**

According to Freeman et al., (2023), there exists three dimensions of remote work across the globe. They opine that these three dimensions may be adopted separately or in combination by organizations depending on their individual objective.

##### **2.1.4a As-Needed/On-Demand Remote Work**

Every company or organization faces a number of attendance issues. They can range from:

- Office power outage
- Inclement weather
- An employee is ill
- An employee has a sick family member
- An employee has a personal appointment or home maintenance need requiring him/her to be at home

For an organization to function optimally it should provide all employees with the option to work from home temporarily. If staff cannot get to the office because of inclement weather or if an employee has to stay home to care for a sick child, they should be able to work from home and not lose a personal day. By not providing all employees the ability to work remotely on an as-needed basis, agencies lose valuable hours of productivity.

Today, no one – not an employee or an employer – should lose valuable time if an employee misses a day in-office for a legitimate reason. By not allowing people to work from home on as-needed basis, employees lose personal days; staff who cover feel overwhelmed; customers do not get the service they need, and the returning employee needs to play catch-up. Everyone loses (Freeman et al., 2023).

##### **2.1.4b Flexible Work Arrangements**

Johnson et al., (2001) stated that flexible work arrangements accommodate the needs of employees and agencies. More organizations are recognizing that to keep talent, they need to accommodate the life needs of their employees. Work-life fit comes in many sizes, such as:

- (a) Arriving late to work to see kids off to school, then working core hours at the office, returning when kids come home from school and working at the end of the day to complete the hours needed for finishing the day's work
- (b) Working from home one, two, three days a week to meet family and work obligations (Johnson et al., 2021).

##### **2.1.4c A Remote Worker**

Porter et al., (1990) opine that as local talent has become more difficult to find, organizations have recognized that a fully remote qualified employee may be another option for recruiting talent. A fully remote worker works



from a home office and may never or rarely come to the office. With the proper setup, qualified remote workers are highly productive, According to the authors, there are many reasons why an employer should consider a remote worker:

- (a) Many employers have experienced that all-too familiar conversation with a productive employee who explains that he/she needs to resign because he/she is moving. Finding a qualified replacement and transferring the client relationship is far more difficult than setting up the employee to work from home. And for the employee, finding a new, satisfying job may be very difficult. With today's technology, no excellent employees needs to resign because he/she is moving.
- (b) Many employers can find the talent within driving distance to their backyard. An experienced remote worker is more effective and far less costly than settling for a revolving door of the wrong talent (Porter et al., 1990).

### **2.1.5 Deregulation of Petrol Pump Price and Emergence of Remote Work and Virtual Teams**

The Nigerian economy is largely dependent on the oil sector and so oil price fluctuations and the direction of such fluctuations are of significant concern to policy makers and other stakeholders alike because such fluctuations influence the price of refined products in the downstream sector. Emerging and developing countries have become the epicenter for urgent socio-economic reforms and restructuring due to the global economic fragility, macroeconomic instability, and socio-economic challenges. For Nigeria, one topic of debate has dominated policy space since the return of democracy in 1999. The topic is whether the Nigerian Government should fully or partially deregulate the country's oil and gas industry ((Chukwudi et al., 2020).

Past reforms on deregulation policies have led to a complete phasing-out of subsidies on some petroleum products like Liquefied Petroleum Gas (LPG) in 2021, gasoline oil in 2017 and kerosene in 2009. Unlike in the case of these petroleum products, the complete removal of subsidies on petrol has been challenging considering its heavy use for household, industrial and transportation activities. Consequently, the impact of fuel subsidy removal will be felt across a long chain of end-users – individuals, businesses, transporters, and end-users of food and non-food items -in the form of higher commodity prices. Therefore, the Nigerian polity is polarized into two: the Government – which supports fuel subsidy removal and the average citizen and trade unions - .which oppose the removal of the fuel subsidy (Braxilian and Onyeji, 2012).

The removal of subsidies on petrol will come at a cost. Tough reforms are costly, and the cost of inaction is also enormous. But the Government must work to minimize this cost on citizens through direct and indirect interventions (Ogunmakin et al., 2024). Implementing subsidy reforms without complementing the policy with effective mitigating measures will only elevate economic hardship for Nigerians and could stoke social unrest as a result. For instance, the abrupt removal of fuel subsidies pronounced on January 1, 2012 led to over N320

billion in economic losses per day (see Brazilian and Onyeji, 2012). Since the EndSARS protest in 2020, Nigeria has been in a fragile state. Therefore, abrupt fuel subsidy removal might lead to protests which should be avoided at this critical juncture. More importantly, rebuilding public trust is not an easy task, but if government actions continuously favor credibility over discretion, the trust deficit will be narrowed (Udoka, 2021). This the NESG believes will also go a long way in improving public acceptance, as reforms will be implemented in the general interest of the populace.

The inception of the Tinubu administration by May 29, 2023 ushered in a new wave of incessant and indiscriminate increment and adjustment of fuel pump price in Nigeria (Okeke et al., 2024). The Government at inauguration announced the immediate removal of fuel subsidy leading to an outcry by Nigerians. The immediate effect of this proclamation was indeed greeted with high increment in the prices of commodities (Yahaya et al., 2024). Within a year and half that President Bola Ahmed Tinubu took over the reins of power, he had increased fuel pump price more than seven times from the original N450 per liter at the handover speech of his predecessor, President Muhammadu Buhari on May 29, 2023 to N1,300 per liter, bringing in its wake exorbitant increment in the prices of other commodities and outrageous hike in transportation costs across the country (Eme et al., 2024).

Although, remote work and virtual teams in Nigerian organizations have had its root during the COVID-19 pandemic, it has become well-pronounced with the obnoxious hike in transportation cost and excessive high cost of living being experienced by Nigerians due to the insensitive and inconsiderate fuel subsidy removal of the present administration in Nigeria. Nigerian workers are grueling under severe burden of hike in transport costs which has made it extremely difficult to be regular in the office throughout the week days (Eme & Udodirim, 2024). Hence, Managers of organizations in Nigeria are presently adopting the window of remote work and formation of virtual teams to carry out their daily activities. For the Human Resource Manager and HR departments, there is need for them to update their knowledge and necessary skills required to engage in effective and efficient management of employees involved in remote work and virtual teams in order to achieve organizational goals and objective as is obtainable in developed countries of the world (Oguejiofor et al., 2024).

## **2.2 Remote Work and Virtual Teams**

Isah et al., (2016) opine that modern technology secure remote connectivity, the Cloud, collaborative software, VoIP phones, and "Bring Your Own Device" (BOYD) - is disrupting the way we work and providing opportunities for remote out-of-office work. Many managers and employees are already working outside the office using their personal devices, but typically on an ad hoc basis without clearly written remote work and virtual teams' best practices. James et al., (2013) agreeing with Isah et al., (2016), added that employees may

have implemented security measures to protect their systems and data, but they rarely address the larger trend issue of remote work, also referred to as telecommuting. Remote-work best practices is not just about technology and security, it is also about the needs of people and organizations.

Technology has transformed every part of our work and life. The 9-to-5 workday has been rapidly as more employees do some of their job outside the office. According to a recent study done by the Society for Human Resource Management (SHRM), 69% of U.S. employers allow employees to work from locations outside the office. This trend will continue to grow. Some employees still believe that a flexible work arrangement is strictly an employee benefit, but most have recognized that giving employees the ability to work outside the office has made employees more productive and has greatly benefitted the business. It has also led to the blurring of personal and work life and the expectations that we must always be available.

The new best management approach focuses on outcomes, not suppositions. The emphasis is on flexible work arrangements and on finding and keeping talent; which may mean accommodating diverse physical locations and non-traditional work-life-fir arrangements. , for According to the American Staffing Association's Workforce Monitor statistics, SHRM and other research agencies, for most employees, work-life balance and schedule flexibility rank higher than pay.

## **2.3 Theoretical Review**

This study was underpinned or anchored by a combination of two theories: the transformational leadership theory (see Bass, 1990) and the cognition-based and affect-based trust theory for interpersonal cooperation in organizations (see McAllister, 1995). We shall discuss these two theories, highlighting their relevance to this study.

### **2.3.1 The Transformational Leadership Theory**

The transformational leadership theory is described as motivating people by outlining tasks that help them perform successfully (Burns, 1978). According to Bass (1985), transformational leaders influence their followers' performance outcomes by earning a high level of trust. There are four elements to transformational leadership: (a) charisma, (b) inspirational leadership, (c) individualized consideration, and (d) intellectual stimulation (Bass, 1985). According to Bass (1990), transformational leadership achieves superior performance results where leaders broaden and elevate the interest of their employees, are aware of and accept the organization's purpose and mission statement and allow employee growth beyond the employee's personal expectations.

### 2.3.2 The Cognition-Based and Affect-Based Trust Theory

McAllister's (1995) concept of trust includes both affect-based and cognition-based trust. Cognition-based trust is rooted in one's belief about peer reliability and dependability, while affect-based trust is represented by one's reciprocal care and concern. Interpersonal trust is a critical part of sustaining an individual and team's effectiveness, while cognition-based trust directly impacts a team's potency (via performance-relevant cognitions).

Researchers use the transformational leadership theory and McAllister's theories to examine how the understanding of trust and a specific leadership style can affect trust, job performance, and growth within a team environment. There is a correlation between trust and leadership, with the creation of trust as vital to a team's success (McAllister, 1995). The transformational leadership theory and the cognition-based and affect-based trust theory helps explain how virtual team leaders combine influence, empowerment, task autonomy, and interpersonal traits into potential strategies for creating, implementing, and maintaining trust among team members to enhance job performance and retain employees.

### 2.4 Theoretical Framework

The central part of this qualitative research is dedicated, to investigate how problems, employee experience in virtual teams, developed, due to the transition to full-time virtual teams. This transition is facilitated through the recent COVID-19 epidemic, which forces companies and employees to work from home and execute their tasks via virtual teams. In general, the problems are identified in relation to virtual team performance. Unfortunately, virtual team performance is rarely conceptualized, defined or only in conjunction with a single variable (Lippart & Dulewicz, 2017). Inspired by the suggestions of my supervisors, the author deliberately decided to expand the scope of this research by integrating traditional project management literature. After the initial desk research using the keywords, team performance, team effectiveness and project performance, team effectiveness and project performance, it was striking that the project management triangle can serve as a suitable alternative. For this unique purpose, the three dimensions are applied to virtual teams, and the scope limited to team performance problems, instead of individual execution, are collected and analysed.

#### 2.4.1 Time

The first dimension considers the amount of time attributed to complete a project within a team (Westland, 2018). In this category, issues, extending or postponing the project execution, are collected and analysed.

### 2.4.2 Budget

Is concerned with the financial constraint of a project team (Westland, 2018) and highlight what problems in virtual teams increase the budget beyond its initial planning. To eliminate noise, the Boolean operator NOT was deployed to excluded other domains than management, decision making, economics and business.

After deciding whether all relevant keywords very mentioned in the abstract are duplicated were removed, a total of 89 articles remained for close examination. During the additional assessment, all items deviating from the review topic and not contributing to the identification of problem sources within virtual performance, were eliminated. In conclusion, 53 papers were included in the literature review.

Content wise, the identified problems of the literature review in relation to the team performance dimensions are displayed in Table 4. The table summarizes the top three problems of each performance dimensions and in the key findings columns shortly explain each hindrance in semi-virtual teams.

### 2.5 Empirical Literature

The Impact of Remote Work and Virtual Teams on Organizational Performance was studied by Kumar, and Mallipeddi, (2022). The paper examines Remote Work and Virtual Teams vulnerabilities and their increasing difficulties within the framework of Industry 4.0 and Industry 5.0. In order to lessen the effects of high absenteeism and overall employee turnover, it suggests study directions for strong strategies in supply chains, disruptive technologies, public policy, healthcare management, and worldwide operations.

Republic of Croatia's Remote Work and Virtual Teams strategic management is outlined in Cvitić, et al. (2017). This study examines Croatia's strategic advancement in Remote Work and Virtual Teams and contrasts it with the plans of EU member states. It points out shortcomings and offers recommendations for enhancing organizational performance.

Hskjold, Kleiven, and colleagues' (2019) study, "Risk Management and Remote Work using Virtual Teams in the Nigerian Oil Sector," was one of the first to examine risk management and organizational performance in the Nigerian oil and gas business. A case study of how companies identify and mitigate risks of non-compliance in the Nigerian business climate” The goal of the investigation was Our thesis will discuss the risk factors that decision-makers consider, the significance of the fight against corruption now and in the future, and how corruption harms people, businesses, and society as a whole. They employed a desk review in their analysis, and the findings demonstrate that companies do not accurately estimate the risk of non-compliance through risk measures and do not, as a result, identify the most significant risks in Nigeria. Additionally, compliance programs are insufficient to take preventive measures against internal involvements in non-compliance.

The impact of an integrated remote work and virtual teams risk management method for a cyber-physical system was evaluated by Kure, et al. (2018). A framework for integrated risk management for effective and efficient remote work in a virtual team -setting in critical infrastructure sectors is presented in this study. It evaluates how vulnerabilities affect vital assets and offers a proactive risk mitigation methodology, including an example of a power grid system.

In their paper Remote Work and Virtual Teams Management in small and medium-sized enterprises: An analysis, Alahmari, and Duncan, (2020), provides critical viewpoints that are important for SMEs to consider while managing cybersecurity risk, such as threats, practices, behaviors, awareness, and decision-making. Also, Impacts of Remote Work and Virtual Teams on Digital Operations: Evidence from the Pharmaceutical Industry was researched by Solfa, (2022). The study looks into how supply chain risk and cybersecurity affect digital operations in the pharmaceutical sector in the United Arab Emirates. Through the analysis of data from 243 employees in 14 pharmaceutical manufacturing companies located in Dubai, the study confirms that supply chain risk associated with digital operations and cyber security are positively correlated. In order to maintain the seamless operation of digital operations, the study emphasizes the need of controlling the activities of Managers and recommended better trainings for Managers to effectively manage Virtual Teams and Remote Work practices in organizations for greater productivity and supply chain vulnerabilities. It also emphasizes the necessity for additional research to broaden this understanding across a variety of industrial industries.

A study on Remote Work and Virtual Teams Models in Banking was conducted by Ghelani et al. in 2022. The study focuses on the possible risks and weaknesses in adopting this work settings especially in cloud-based storage systems, and tackles the urgent issue of data security in an increasingly digital environment. It highlights the necessity of intruder detection and suggests protecting data from attackers by using machine learning, biometric recognition, data learning, and hybrid approaches. In order to lessen the threat posed by intruders, the paper proposes a concept for a secure banking system that uses digital signatures and biometric impressions.

Industrial management's use of Remote Work and Virtual Teams applications in organizations in the internet of things was studied by Raimundo, et al. in 2022. The paper explores the security issues that Internet of Things (IoT) systems have, especially in the Industrial Internet of Things (IIoT) space. It draws attention to the necessity of cutting-edge IIoT cybersecurity solutions, which are necessary to safeguard infrastructure and sensitive data. The review article highlights the need for strong cybersecurity solutions to solve security issues in networked environments by discussing trends, possibilities, and dangers in IIoT cybersecurity through a thorough study of 70 relevant papers.



He, et al. (2022) investigated robust and automated Remote Work and Virtual Teams management based on block chain technology. In order to guarantee dependable CSM answers, the paper tackles the issue of automated and robust Cyber Security Management (CSM) and suggests a decentralized solution, B2CSM, that integrates block chain technology. In order to maximize CSM results, the study separates CSM into three categories: network-centric, tools-centric, and application-centric. Block chain is then integrated. Through real-world dataset trials, the paper highlights the potential of the proposed system to improve cybersecurity management with distributed solutions and illustrates its effectiveness and efficiency.

In their Institutional strategies for Remote Work and Virtual Teams management in higher education institutions, Cheng, & Wang, (2022) offer institutional strategies for enhancing remote work and virtual teams from a system-wide perspective. The study focuses on the vulnerability of Higher Education Institutions (HEIs) to cyber threats. The study examines forecasts and trends in cybersecurity throughout time, emphasizing how critical it is to improve HEI cybersecurity capabilities. The suggested approaches include risk management, security measures, AI-based threat management, governance, policy, and training. The paper places a strong emphasis on a comprehensive strategy for HEI cybersecurity protection against growing cyber threats in the management of Remote and Virtual Teams practices in organizations, be it educational or otherwise.

### **3.0 Methodology**

#### **a) 3.1 Research Design**

Survey-based research design was used in the study, with a focus on NNPC Gas Marketing Company (NNPC-GMC) as the primary case study. This design allows for the collection of quantitative and qualitative data from a significant number of participants, to address the slated research objectives and hypotheses testing.

#### **3.2 Target Population**

The study utilized a single-case study approach, targeting NNPC Gas Marketing Company (NNPC-GMC) as a representative organization within the Nigerian oil and gas sector. This sector is highly susceptible to cybersecurity threats due to its critical infrastructure and sensitive data. According to Premium Times (25<sup>th</sup> May, 2022) paper, NNPC has 6,621 staff strength both at its headquarters and across all its subsidiaries, divisions and offices nationwide. 76 of which are employed at the NETCO division.

#### **3.3 Sample Size and Sampling Technique**

The study used simple random sampling technique to select participant among the identified staffs of NNPC-GMC) Adopting the Taro Yamane sampling size formula technique, the study used 70 individuals as representatives of 120 NNPC-GMC staffs.

### 3.4 Data Collection Technique

A structured questionnaire was administered to employees at NNPC-GMC and other relevant stakeholders. The survey sought to collect data on: perceptions of NNPC-GMC staff on the impact of Remote Work and Virtual Teams practices on organizational performance in the era of Petrol Pump Price Deregulation as prevalent in the country since the inception of Mr Bola Ahmed Tinubu led Federal Government in May 29, 2023, and the impact of risk identification, risk assessment and risk monitoring on cybersecurity threats, current methodologies used for risk identification and assessment, and the effectiveness of existing cybersecurity measures and risk management practices.

More so, analysis of financial records, audit reports, and Remote Work and Virtual Teams logs from NNPC-GMC provided quantitative data on: frequency and severity of remote work and virtual teams activities incidents, financial impact of these incidents on the organization, and historical data on Remote Work and Virtual Teams practices and their evolution over time.

### 3.5 Analysis Technique

Basic descriptive statistical tools such as frequency tables, charts, simple percentages, mean values, standard deviations, and standard error was used to summarize the survey data, providing an overview of the perceptions and practices related to Remote Work and Virtual Teams; whereas independent t-test was employed to identify significant relationships between the research questions and management of remote work and virtual teams practices.

## 4.0 Results and Discussion

### 4.1 Demographics of the Respondent

**Table 1: Tabulation of Department**

Department	Freq.	Percent
Electricals	1	2.50
Finance	6	15.00
Human Resources Department	2	5.00
IT	12	30.00
Internal Audit	2	5.00
Operations	4	10.00
Piping	1	2.50
Public Affairs	1	2.50
Risk Management	10	25.00
Software Engineering	1	2.50
Total	40	100.00

**Source: Fieldwork, 2024**

Table 1 reveals a diverse range of departments within the organization, with IT and Risk Management being the most prominent, accounting for over 50% of the workforce. Finance (15%) and Operations (10%) also represent significant departments, while several others, including Electronics, Piping, and Public Affairs, have smaller but essential roles.

**Table 2: Job Role**

Job Role	Freq.	Percent
Consultant	1	2.56
Management consultant	1	2.56
Manager	3	7.69
Staff	23	57.50
Supervisor	12	30.77
Total	40	100.00

**Source: Fieldwork, 2024**

Table 2 displays the roles respondents assumed at the job. The table presents a mix of job roles, with "Staff" being the most common, constituting about 57.5% of the employees. Supervisors (30.77%) and Managers (7.69%) also form a substantial portion of the workforce, indicating a hierarchical structure. Consultant roles, while fewer in number, likely play specialized roles within the organization.

**Table 3: Years of Experience in Current Role**

Years of Experience in Current Role	Freq.	Percent
1-3 years	19	47.50
4-6 years	5	12.50
7-10 years	13	32.50
Less than 1 year	3	7.50
Total	40	100.00

**Source: Fieldwork, 2024**

Table 3 shows the years of experience of NNPC-Gas Marketing Company employees. A significant portion of the employees (47.5%) have been in their current roles for 1-3 years, suggesting a relatively young and dynamic workforce. About 5 employees accounting for 12.5% of the total respondents have 4-6 years of working experience. Those with 7-10 years of experience form another significant group (32.5%), indicating a balance between newer and more experienced staff.

**Table 4: Level of Education**

Level of Education	Freq.	Percent
Bachelor’s Degree	21	52.50
Master’s Degree	17	42.50
Secondary School	1	2.50
Ph.D	1	2.50
Total	40	100.00

**Source: Fieldwork, 2024**

Table 4 shows that more than half of the respondents, 52.5%, hold Bachelor’s degree as their highest qualification. A slightly lower portion of the respondents, 42.5%, attained Master degree level. However, the remaining two respondents constitute of 1 with doctorate degree while the other has only secondary school education.

**Table 5: Has your organization been adopting Remote Work and Virtual Teams Management Practices?**

Has your organization been adopting Remote Work and Virtual Teams management practices?	Freq.	Percent
No	16	40.00
Yes	24	60.00
Total	40	100.00

**Source: Fieldwork, 2024**

Table 5 reveals that 60% of organizations have been adopting remote work and virtual teams management practices in the past year, highlighting the prevalence of such occurrences. The remaining 40% disagreed which aligns with the earlier finding that some organizations never practiced remote work and virtual teams This suggests that while remote work and virtual teams are common, they are not universal.

#### 4.2 Remote Work and Virtual Teams Experience

**Table 6: Frequency of Practice of Remote Work and Virtual Teams in mu organization**

How often does your organization practice Remote Work and Virtual Teams work ethics?	Freq.	Percent
Frequently	6	15.00
Never	9	22.50
Occasionally	15	37.50
Rarely	10	25.00
Total	40	100.00

**Source: Fieldwork, 2024**

According to Table 6, a significant portion of organizations experience remote work and virtual teams-practices (37.5%), with 25% reporting rare occurrences and 15% frequently encountering such threats. Interestingly, 22.5% of organizations have never experienced any remote work and virtual teams-practices. This distribution suggests that while cybersecurity threats are a concern for many organizations, the frequency varies, with a notable portion either rarely or never experiencing them.

**Table 7: Impact of Remote Work and Virtual Teams on Organizational Performance**

What is the impact of remote work and virtual teams-practices on organizational performance in NNPC-Gas Marketing Company?	Freq.	Percent
Strongly positive	15	10.00
Moderately positive	8	20.00
Negative	4	37.50
Slightly negative	4	10.00
Very negative	9	22.50
Total	40	100.00

**Source: Fieldwork, 2024**

Table 7 complements table 6 by showing how remote work and virtual teams practices influence organizational performance. The largest group of respondents (37.5%) perceives remote work and virtual teams-practices as "Strongly Positive," while 22.5% see them as "Moderately Positive." This varied perception indicates that while some organizations downplay the relevance of remote work and virtual teams-practices in organizations, others recognize a significant contribution made by the concept. Such diversity in perception could stem from differences in organizational size, industry, or previous experiences with remote work and virtual-team practices.

### 5.1 Recommendations

Based on the suggestions provided by respondents and the findings of the study, the following recommendations are proposed to enhance the effectiveness and efficiency of Remote Work and Virtual Teams' practices within corporate organizations:

1. Organizations must prioritize continuous remote work and virtual teams' policies and planning and identify efforts to effectively and efficiently motivate employees. This involves creating more consistent awareness among staff to enable them to identify potential remote and virtual teams work practices.

2. All Managers and personnel involved in Remote Work and Virtual Teams' practices should undergo specialized training in today's remote work and virtual team management practices. This will equip them with the necessary skills to understand and address strategic remote work practices in order to enhance organizational productivity and overall performance.
3. The involvement of experts in the Remote Work and Virtual Teams' process is crucial. Companies should consider incorporating roles such as Chief Strategy Officer (CISO), Chief Remote Work Officer (CRWO) and Chief Data Officer (CDO) into their organizational structure.
4. NNPC-Gas Marketing Company, and similar organizations, should consider reorganizing their structures to include specific positions dedicated to remote work and virtual teams' management. These roles should focus on efficient monitoring of remote workers and ensuring the organization's efficient and effective remote work processes.
5. Encouraging teamwork across different departments and levels within the organization is essential for effective remote work process management; they should implement regular feedback loops to assess the effectiveness of remote work measures and virtual teams practices.

### **5.2 Implications**

The study provides a wide perspective to the inherent relationship between remote work/virtual teams practices and organizational performance within NNPC-Gas Marketing Company. Other corporate organizations may as well adopt the methodology as solution to efficient remote work practices. The Management of NNPC-GMC should continually review its business strategies for remote work and virtual team practices. Also, the study has implications for the evolution of remote work and virtual team practices where it suggests that while traditional risk assessment methodologies are widely used, there is a gap in the adoption of advanced techniques like Monte Carlo Simulation and Failure Modes and Effects Analysis (FMEA). A more sophisticated analytical tools are needed to enhance the effectiveness and efficiency in remote work and virtual-teams practices.

### **5.3 Conclusions**

The study provides a glimpse into the dynamic relationship between remote work and virtual teams practices and performance within corporate organizations, as well as the methodologies employed for proper management of the subject matter. The study also discusses the methodologies used for management of remote work and virtual teams in corporate organizations. SWOT Analysis, Interviews/Surveys, and Brainstorming Sessions emerge as the most employed methods for identifying remote work processes, reflecting a preference for qualitative, internally focused approaches. While these methods are widely adopted, the relatively lower usage of structured techniques like PEST Analysis suggests a potential gap in considering external factors. In



terms of measuring its efficiency, organizations predominantly rely on more advanced techniques such as Monte Carlo Simulation and Failure Modes and Effects Analysis (FMEA) indicates that many organizations may not be fully leveraging the analytical tools available to them. The mixed effectiveness of these assessment methodologies, as perceived by respondents, further suggests the need for organizations to explore and adopt more sophisticated remote work and virtual teams practices that can better address the complexities of remote work environments.

Finally, Managers and the Management of modern organizations are obliged to deliberately make policies that would entrench a friendly-work environment culture to enhance remote work and virtual teams-practices. Employees of organizations should be encouraged to perceive remote work activities as a part of their daily routine. They should be properly motivated through letter of appreciations, higher salaries, remote work allowances and packages, awards, paid-up leave allowances, holidays with family abroad, amongst other benefits that would spark their total commitment and engagement for remote work and virtual teams efficiency and effectiveness.

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## THE IMPACTS OF MULTINATIONAL CORPORATIONS ON THE SOCIO-ECONOMIC DEVELOPMENT OF NIGERIA (A CASE STUDY OF NIGERIA BREWERIES PLC)

**CHUKWUEMEKA GODSON EME (PhD)**

**Lecturer, Department of Business Administration, Faculty of**

**Management Sciences (NOUN), Jabi-Abuja, Nigeria**

**Tel: +234, 1, 904, 992, 9862; E-Mail: ceme@noun.edu.ng**

### ABSTRACT

Multinational corporations (MNCs) are enterprises which have operations in more than one country. They manage production establishments or deliver services in at least two countries. This study examines the impacts of Multinational Corporations (MNCs) on socio-economic development of Nigeria adopting a case study from the Nigeria Breweries PLC. The specific objectives of this study were to: determine the impact of Multinational Corporations (MNCs) on the integration of international and indigenous business in Nigeria; assess the socio-economic benefits behind the integration of indigenous and international business in the context of Nigeria, adopting the Nigerian Breweries PLC as a case study; evaluate the impact of World Trade Organization (WTO) on the integration of international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC; highlight the impact of government attitude on the integration of international and indigenous businesses, adopting the Nigerian Breweries PLC. This study adopted the descriptive survey research design. The total population for this study was 1,200 staff of Nigeria Breweries (NBL) PLC selected from the middle-level managers and top-executives of (NBL) PLC. Out of this total, 120 employees were selected for this study using the simple random sampling technique that is 10% of total. The study adopted both primary and secondary modes of data collection. Primary data was collated using structured questionnaires while the secondary data was from relevant books on the subject matter, journals, articles, company periodicals, unpublished projects, dissertations and thesis. Both the descriptive and inferential statistic were employed in the analysis of data collated from field work. Descriptive statistic employed frequency distribution tables, mean and standard deviation (SD) while the independent t-test was adopted in testing the hypotheses for the study. Statistical Packages for Social Sciences (SPSS) Version 26 was further employed in the data analysis. The study revealed that multinational corporations performed vital roles such as employment generation, improvement of infrastructural development, poverty alleviation, building competence and local skills of local workers. The study further revealed that highly paid skilled wages were not received by local workers, workers are exploited,



profit repatriated, and out-model technologies are transferred and environments are polluted in most developing countries by multinational corporations. The study recommends that Nigerian government should initiate regulatory laws that can discourage multinational corporations from exploiting and engaging in policies that are not beneficial to its citizens. Moreso, they should initiate economic policies that will attract multinational corporations to invest in the country considering the significant benefit its citizens gained with regards to employment, poverty alleviation, economic growth and development.

**Key Words: Multinational Corporations (MNCs), Socio-economic development, Nigeria Breweries Plc**

## 1.0 Introduction

Multinational corporations (MNCs) can be defined as enterprise that engages in foreign direct investment (FDI) of which owns or, to some extent, controls value-added activities in several countries (Mayrhofer & Prange, 2015). It is widely acknowledged that multinational corporations (MNCs) had become the key institution and engines of socio-economic development in developing or less developed countries (LDCs) (Ayesha, 2020; Chen, 2020; Prema, 2020; Pettiinger, 2019; Okon & Okon, 2018; Amusan, 2018; Ambibola & Dele, 2015; Worsinchai & Bechina, 2010). Multinational corporations have acquired great relevance in the academic world and in firm management in recent years (Aguilera-Caracuel, Guerrato-Villegas & Garcia-Sanchez, 2017). Majority of these corporations started their operations many decades back. Although, there are significant changes in their operations in recent times, Nizzamuddin (2007) reveals that: today, multinational corporations (MNCs) comprise a central place in the world economy. Before World War II, terms such as ‘‘multinational’’ or ‘‘transnational’’ were seldom used to describe international economic relations. Although, transnational entities like the British East India Company and Joint-Stock Enterprises existed in the past, the expansion and proliferation of multinational agents is a recent phenomenon (p.1).

In an era where external assistance (development aid) to developing countries (DCs) has been declining due to the fact that the donors in developed countries have not been willing to part with a larger proportion of their GDP as assistance to developing countries (Ayesha, 2020). Multinational corporations (MNCs) therefore have to step in. According to Ayesha (2020), multinational corporations (MNCs) are important source of foreign direct investment (FDI). A number of factors or combination of factors has contributed to the enormous expansion and spread of the multinational activity in the past three decades. Loku & Loku (2016) posits that: changes in technology and organizational sophistication created the possibility of expansion. The development of new communications technologies, cheaper and more reliable transportation networks, and innovative



techniques of management and organization have made possible the kind of concentration, integration, and flexibility that are the hallmark of the successful MNCs (p.77).

Multinational corporations tend to have budgets that exceed those of many small countries (Chen, 2020). The dominant player in the modern world investment set up multinational corporations (Cliccker, 1990). The challenges faced by multinational corporations in most developing countries during entry into market include government regulations and policies, geographical location, language barriers, shortage of skilled labor, and low level of intellectual property development (Abimbola & Dele, 2015).

Weak rates of intellectual property protection in developing countries also prevents both down-stream and up-stream technology transfer activities characterized by the fear of unauthorized use of proprietary knowledge prevents foreign companies or corporations from entering into transfer activities with local entities (Abimbola & Dele, 2015). In addition, corruption and insecurity discourage multinationals as corruption is adjudged to increase the cost of doing business and as a result most foreign investors would rather want to invest in countries with lower levels of corruption which derive maximum profits from investment (Abimbola & Dele, 2015). Moreso, insecurity which manifest in kidnapping, hostage taking, armed robbery, burglary, religious, ethnic and political crisis, terrorism and killings in most developing countries like Nigeria discourage foreign investment from multinational corporations rather firms prefer environments that are peaceful and investment-friendly (Abanyan, Abubakar & Ikwuba, 2017; Abimbola & Dele, 2015). Moreover, Kamg (2013), asserts that multinational corporations are under more pressure because they face very relevant, diverse, strong interest groups in the local and global environment, groups that will grant them legitimacy and the power to act.

Worasinchai & Bechina (2010), suggests that the investments by foreign companies make the developing countries more receptive to social and economic changes as they enter in the global market and they have to adopt modern values and business practices. The host country should facilitate the operations of MNCs because their direct investments are much easier to obtain than funding from traditional channels such as the World Bank, national development organizations, or non-profit organizations (Worasinchai & Bechina, 2010).

Nevertheless, Tirimba & Macharia (2015), argue that multinational corporations do not come into being from thin air. There has to be some motives, substance, some meaning, reasons and some objectives for them to come into being. Ayesha (2020), insists that multinational corporations exist because they are highly efficient. He further asserts that their efficiencies in production and distribution of goods and services arise from internationalizing certain activities rather than contracting them to other firms.

Similarly, Aguilera-Caracuel, Guerrero-Villegas & Garcia-Sanchez (2017), suggest that one of the main reasons these firms invest in developing countries is to improve their reputation. Not surprisingly, Ferdausy & Rahman

(2008) doubts the accuracy of this account. Instead, they stressed that many multinational corporations enter developing country basically to exploit cheap labor and abundant natural resources. He further assert that multinational corporations make just a little contribution to employment, and they discourage local entrepreneurs by competing and acquiring existing firms, by using expatriate managers instead of training local people, and by hiring away local skilled workers. Oden (2019), argues that: developing nations attract multinational subsidiary operations due to a number of factors such as cheap labor, low taxation and less vigilance concerning workers' rights and environmental protection. They are made to contribute to the social security net (i.e. welfare, unemployment insurance, etc.), other factors including low pay for women workers, child labor, and the absence of labor unions, also combine to make the Third World Ripe for Exploitation.

The introduction of Multinational Corporations (MNCs) into a host country's economy may also lead to the downfall of smaller, local businesses (Chen, 2020). Robbok & Simmonds (1989), laments that the rise of multinationals into a host country's economy have confronted the nation state with the challenges of the operations of the local jurisdiction. The nation state has to grapple with national interests and how to protect them from being compromised by the multinational corporations whose focus is to control and transfer goods and money as they cross national borders. Tirimba & Macharia (2015), confirm that MNCs have devastating effects on their host countries; they are crafty in their dealings and do more economic and political harm and perpetuate poverty in the less developed countries (LDCs).

Nevertheless, Multinational Corporations (MNCs) on the other hand, benefit much from lower costs and grants given by the government of developing economies to attract more MNCs. More often, lower tax rates or tax exemptions are given to MNCs for a period in the developing countries (Ferdausy & Rahman, 2009). On the other hand, most of these developing countries also benefit (gain) from the investment made by the multinationals. Multinational companies help in reducing poverty, driving economic growth, creating jibs that u2009). In addition, they can boost economic development by transferring technology and knowledge, utilize local people, raise employment standards by paying better wages at least more than local firms pay or subsistence agriculture (Pettinger, 2019; Ferdausy & Rahman). In addition, they can boost economic development by transferring technology and knowledge, improve or build up infrastructure raise people's standard of living (Ajibo et al, 2019; Okon & Okon, 2018; Evstigneeva, 2016; Hairy, 2013; Dunning, 2013). However, there appears to be uncertainties about the activities of these corporations, in both positive and negative ways (Pettinger, 2019; Ferdausy & Rahman, 2009). MNCs take undue advantage of developing countries. Many are guilty of causing environmental pollution, repatriation of profit, monopolizing the economy, paying low wages, forcing local firms out of business and doing human rights abuse (Pettinger,

2019). It is in line with this mix perspective (both positive and negative) that this study sought to examine the impacts of Multinational Corporations (MNCs) on the socio-economic development of Nigeria adopting the Nigeria Breweries PLC as a case study.

### **1.2 Statement of the Research Problem**

The primary research focus of this study is to examine the Impacts of MNCs on the socio-economic development in the host country's integration of indigenous and international businesses. The focused research context of Nigeria is suitable for such a study for few reasons. For instance, Nigeria is an emerging market with the 27<sup>th</sup> largest economy in the world. The GDP of the country is over \$450 billion, with an estimated population of 242 million people living in this country. The country is bestowed with a large number of natural resources, and Nigeria is the largest exporter of crude oil in Africa. Volatility in oil prices greatly influences the GDP growth of the country, The average GDP growth of the country from the year 2000 to 2014 was about 7% on the average, which then fell to about 2.7% in 2015 when there was a fall in oil price. The average GDP growth of the country has been 2% on average since 2015 ([www.worldbank.com](http://www.worldbank.com), 2019).

The dependence on natural resources threatens the stability of the economy. Now the country is focusing on manufacturing and consumption for GDP growth for which it is opening its economy for foreign investors. Multinational corporations (MNCs) are investing greatly in this growing economy where there is huge scope for expansion. All of these background facts of Nigeria's economy suggest that Nigeria is a suitable research context for the primary research focus of analyzing the impacts of MNCs on its socio-economic development.

The Nigerian Breweries PLC is listed on the Nigerian Stock Exchange (NSE) as the largest Brewer of Beer and other food drinks and confectionaries in Nigeria. It is affiliated to the World's largest Beer brewery industry (Heineken Brewery Worldwide) that has businesses in over 150 countries, and there are around 89 production sites of the company. Hence, Nigerian Breweries PLC qualifies as a multinational corporation (MNC) and worthy to be adopted as a case study for this research. In Nigeria, the head office and manufacturing plant is located in Eric Moore Industrial Layout, Surulere, Lagos ([ng.nbl.com](http://ng.nbl.com)).

Nigerian Breweries PLC has been a strong presence in the Nigerian market through its regional sales team and also gained vast experience in the international expansion through organic growth, merger, and acquisition. The integration of the company can be assessed looking at the mission of the company and the channels of distribution of its products and how they source raw materials ([ng.nbl.com](http://ng.nbl.com)). Thus, analyzing the impacts of Nigerian Breweries PLC as a multinational company can provide strong evidence to this study which might validate the research outcome at an upper level to draw conclusions on whether the activities of the

multinational corporations (MNCs) have impacted positively or negatively on the socio-economic development of Nigeria.

### 1.3 Objectives of the Study

The main purpose of this study is to examine the impacts of Multinational Corporations (MNCs) on the socio-economic development of Nigeria adopting the Nigerian Breweries PLC as a case study. The specific objectives include to:

- i. determine the impact of Multinational Corporations (MNCs) on the integration of international and indigenous business in Nigeria using the Nigerian Breweries as a case study;
- ii. assess the socio-economic benefits behind the integration of indigenous and international business in Nigeria adopting the Nigerian Breweries PLC as a case study;
- iii. evaluate the impact of WTO on the integration of international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC;
- iv. highlight the impact of government attitude on the integration of international and indigenous businesses in Nigeria adopting the Nigerian Breweries PLC as a case study,

### 1.4 Research Questions

In line with the research objectives, the following research questions were formulated:

- i. What is the impact of Multinational Corporations (MNCs) on the integration of international and indigenous businesses in Nigeria adopting the case of Nigerian Breweries PLC?
- ii. What are the socio-economic benefits behind the integration of international and indigenous businesses in Nigeria using the Nigerian Breweries as a case study?
- iii. What is the impact of WTO on the integration of international and indigenous businesses in Nigeria with particular reference TO THE Nigerian Breweries PLC?
- iv. What is the impact of government attitude on the integration of international and indigenous businesses in Nigeria adopting the Nigerian Breweries PLC as a case study?

### 1.5 Research Hypotheses

In line with the research objectives, two null hypotheses were formulated and will be tested at 0.05 level of significance:

Ho1: There is no significant difference in the mean ratings between the opinions of male and female respondents of the Nigerian Breweries PLC.

Ho2: There is no significant difference in the mean ratings between the opinions of the Management Team and other employees of the Nigerian Breweries PLC.

### **1.6 Significance of the Study**

This study will provide a working template for Managers of the Multinational Corporations (MNCs) on the right business relationships to adopt in their dealings with the government and the entire Nigerian citizenry as they engage in their business operations. The study will assist policy makers (particularly the government) and development planners to comprehend the level of contribution of Multinational Corporations to the people's socio-economic wellbeing. The viability and successful operations and its adherence to Corporate Social Responsibility (CSR) to the locations where they operate and the entire populace of Nigerians by the Nigerian Breweries PLC in Nigeria was the subject of discussion which practices the researcher admonishes other upcoming multinationals to imbibe.

This research will also provide very useful materials for academics and would no doubt spark off further research in this area of study. This work would equally be utilized in teaching and learning for students in the Faculty of Management Sciences (Business Administration, Entrepreneurship, Marketing, Public Administration, Financial Studies including Banking & Finance, Accounting & Operations Research (OR) across the globe.

### **1.7 Scope of the Study**

This study limits itself in finding out the impacts of Multinational Corporations (MNCs) on the socio-economic development of Nigeria, adopting a case study from the Nigerian Breweries PLC. It tries to educate the Managers, Practitioners, Academia and Students on how to identify and cushion the negative impacts of the operations and activities of Multinational Corporations (MNCs) in Nigeria by educating both the Government and the entire Nigerian citizenry on what should be a beneficial relationship between them and the MNCs and to insist that the MNCs operates within laid down rules and regulations thereby enhancing our indigenous economy.

In defining the limitations of this study, cognizance was taken of the fact that the activities of MNCs over wide areas whose study may not yield desirable results due to resource constraints are down-played. For this reason, it was found necessary to limit the study to one Multinational Corporation (MNC), the Nigerian Breweries PLC. It was also convenient to confine this study to Brewery and Corporate Social Responsibility (CSR).

## 2.0 Review of Related Literature

This section would review related literature. The section will be divided into four major sections: the conceptual framework which will discuss the basic concepts associated with the topic of this research; the theoretical framework which will discuss the theories that underpin this study; the related empirical study associated with this research; and the summary of reviewed literature.

### 2.1 Conceptual Framework

#### 2.1.1 Historical Evolution of MNCs operations in Developing Countries

Most Multinational Corporations (MNCs) in developing countries first appeared as subsidiary branches of their main companies based in industrialized richer countries. According to Maxon (1992), the MNCs being the main channels for foreign capital represented a network of business enterprise which strived to extend their operations into less developed parts of the world. Some of these activities were independent from colonial domination. During colonial period the MNCs were actively engaged in investments related to extraction of raw materials such as mining and petroleum. After the colonies attained their independence, the MNCs started engagement in manufacture of consumer goods which were oriented to the internal markets of the new nations. MNC operations in Nigeria generally fall into this category. Langdon (1981) conducted a study of Nigerian society focusing first on the historical pattern of Nigerian incorporation into the international economy; second on the shaping of Nigerian social relations as the country's links with the international economy changed in the context of decolonization and third, on the post-independence structure of the Nigerian economy as shaped by external-internal interplay. The study also outlined the position of the MNC sector within the framework. His findings were that there were economic structural changes both in the rural and urban areas after independence. For example, there was increased peasant production in the rural areas due to government policies that encouraged the rural people to engage in cash crop production and other forms of plantation farming. In urban areas there was accelerated pattern of import substituting industrialization coupled with government policy of Africanizing external relationship in Nigeria (Indigenization Policies of the 1960s). These trends which was however not sustained in the 1970s brought about an increasing number of MNCs in Nigeria, as the commercial firms often used their external trade links to attract manufacturing multinationals into joint ventures. The changes also gave an opening to multinationals from other countries to penetrate the Nigerian market which had previously been dominated by British companies and capture a large share of it by taking measures such as locating industrial subsidiaries in Nigeria. The British companies lost economic privileges and monopolies that they had enjoyed during colonial time. These companies found that the only way to protect their market in Nigeria was to locate to Nigeria through their subsidiary companies.



The post-independence period in Nigeria witnessed significant developments which were occasioned by globalization. This refers to the integration of markets within the world economy. As a result, sovereign states have been thrust into world system where markets within their economies have been interconnected. Multinational Corporations (MNCs) have utilized this connectedness to suit their operations within multiple countries. This background sets the ground for literature review on the main variables in this study i.e. Manufacturing (Breweries and other processed food production), Corporate Social Responsibility (CSR) and Socio-Economic Development.

### **2.1.2 Multinational Corporations and Socio-Economic Development**

Multinational Corporations (MNCs) are those having operations in more than one country. They are subject to changes in international exchange rates, tariffs, duties, and restrictions on trade. The most successful ones have established production points where labor is cheap and secures affordable transportation to deliver to their markets (Otokiti, 2012). Many multinationals use outsourcing and subcontracting to reduce their tax liabilities and avoid government regulations, Otokiti, 2012). Multinational corporations contribute to 65% of the non-governmental employment opportunities available at any given country of host (Reid, 2001 cited in Tirimba and Macharia, 2014). In 1998, multinational corporations had 19 million employees in developing countries and were also responsible for more than 100 million jobs created indirectly through multiplier effects (Quinlivan, 2005).

The economic role of multinational corporations is simply to channel physical and financial capital to countries with capital shortages. As a consequence, wealth is created which yields new jobs directly and through ‘crowding in’ effects. In addition, new tax revenues arise from multinational corporations’ generated income allowing developing countries to improve their infrastructures and to strengthen their human capital. By improving the efficiency of capital flows, multinational corporations reduce world poverty levels and provide a positive externality that is consistent with the United Nations (UN) mission – countries are encouraged to cooperate and to seek peaceful solutions to external and internal conflicts (Quinlivan, 2015). In all, Multinational corporations (MNCs) can spur economic activities in developing countries and provide an opportunity to improve the qualities of life, economic growth, and regional and global commons (Litvin, 2002).

### **2.1.3 Negative Effects of Multinational Corporations in Nigeria**

According to Ugbejeh ((2018), Nigeria is very much affected by the negative activities of these multinational corporations operating within its jurisdiction. Their obnoxious acts have affected our economy tremendously. Firstly, environmental degradation is more conspicuous among the oil producing companies/firms in Nigeria. These companies have blatantly degraded our environment, farmlands, wildlife, rivers through gas flaring, oil

spillages (Ibeanu, 2009). At the same time, millions of naira have been lost on these issues because they seriously impede economic growth and development of the country. For instance, Nigerians lost 2.456 trillion in 2006, 2.69 in 2007 and 2.97 in 2008 as a result of the activities of these multinationals.

Multinational corporations have contributed to the technological backwardness of the country. It is in this area that the MNCs are regarded as the worst culprits as they play their greatest trick imaginable. The MNCs by way of purporting to help industrialize Nigeria create a branch-plant economy of small inefficient-firms incapable of propelling overall development. The local subsidiaries exist only as enclaves in the host economy rather than as engines of self-reliant growth. According to Odiete (2021), these corporations intentionally and deceitfully introduce inappropriate types of technologies that hinder indigenous technological developments. He further reiterated that these MNCs employ capital intensive productive techniques that cause unemployment. All these prevent the assorted types of technologies all over the country, though they were of low scale type. The MNCs rather than help them grow knocks them off systematically through the introduction of more advanced technologies. The MNXs both retain the control of the most advanced technology and do not transfer it to Nigeria or the rest of the developing economies at reasonable prices.

The negative impact of MNCs on Nigerian economy is most conspicuous in this area of technology transfer. Ozoigbo and Chukuezi (2011) noted that there are four main reasons for this assertion: the MNCs jealously guard the technological know-how of their technologies by way of refusing to make use of competent staff; most of the imported technologies came under the industrial property system of restrictive patterns and license; introducing very sophisticated technologies which an average indigenous trained Nigerian could cope with; structural distortions whereby the economic base of MNCs are purely in large urban cities to the detriment of the rural areas where greater population of Nigerian elites resides; and the MNCs mal-distribution of income, This step creates a class-conscious society, which does not help development as such.

Adegoke et al, (2022) opine that, because these corporations require a stable host government, which of course is sympathetic to capitalism, they try as much as possible to directly protect the existing government whenever a reactionary leader or group seems to take over the government. The MNCs try to maintain the status quo that is, dependent development which encourages the emergence of authoritarian regimes in the host country and thereby manipulating the state apparatus to suit their economic interests. It is on record that the MNCs kept President Mobutu of Zaire in power for so long because he was tutelage to them and with MNCs they sucked dry the economy of Zaire. The MNCs equally were responsible for the early exit and assassination of Patrice Lumumba because he would not allow their exploitative activities. The same story is true of Captain Thomas Sankara of Burkina Fasso and so many others.

Nkemneme et al, (2019) opine that MNCs have the nature of profit-repatriation to their home base. These corporations have siphoned our economy by sending bulk of their profits to their home countries which they could have invested to develop our country, thereby subjecting the nation to the whims and caprices of underdevelopment. Ojukwu (2020) adumbrated that the royalties or patent paid to the government by these MNCs are so inconsequential that they cannot be invested into heavy industrial projects. To cap it up, Ndukwe et al, (2015) noted: that MNCs are one of the agents of corruption in Nigeria. They have influenced our leaders negatively through bribes to earn their ends meet. This is a wrong signal to the international community and a big minus for Nigerian's image and reputation.

#### **2.1.4 Management of Multinational Corporations (MNCs) in Nigeria**

Managing multinational corporations require a different set of conceptual tools than in the case of purely domestic firms. In particular, it is important to understand the Fundamental economic, strategic, structural, organizational and socio-political issues that have impact on the process of international expansion of the firms, on the linkages between foreign subsidiaries and corporate headquarters in the home country, and on the relationship between the multinational firms and interest groups in the foreign countries, including the government, labor unions, customers and suppliers. Their employment modes such as polycentric, ethnocentric and geocentric approaches should be seriously taken into consideration in order to achieve effectiveness and efficiency in their managerial process. Bernadine (2013:26) explained the above three possible models of managing multinational corporations in Nigeria; These models include:

**Ethnocentric model:** This model works within the assumption that management and human resource practices are critical core competence to a firm's competitive advantage and as such should not be trifled with nor compromised (Bird et al. 1998). Under this model, the foreign subsidiaries tend to have little autonomy and operations and decisions are typically centralized at the headquarters. The bulk of the management staff is usually sent from the headquarters and comprise namely the Parent Company Nationals. Most Japanese and American organizations are known to use this approach in recruiting and deploying their staff (Bernadine, 2013:26).

**Polycentric Model:** This model handles subsidiary as a distinct entity with some level of decision-making authority. Under this model, both the management and the supporting staff are usually selected competitively from the local labor market. The only challenge is that in most cases, these local personnel are hardly ever promoted to work outside their local environment either in other countries where the company has subsidiaries or in the headquarters. This model is cheaper in addition to being more adaptable to local conditions.

**Geocentric Model:** This model tries to remove the boundaries and separating lines between the parent company and the subsidiaries scattered all over the globe. It strives to integrate its businesses and the relationships based on collaboration and mutual reciprocity (Onodugo, 2013). Under this model, the organization begin to see itself as having a global workforce that can be deployed and utilized in a variety of ways throughout the world. Key positions tend to be filled by the most qualified individuals regardless of nationality, race or color. Staff remunerations in companies that are geocentric are generally based on global market rates and standards. Pay and work concentration are solely based on individual contributions to the organization rather than country of origin.

It is important to note that within the contextual needs of developing countries any models chosen must strike a balance between maximizing its huge labor potential and providing opportunities for technology transfer. A critical look at the models enumerated above, one can suggest that, for multinational corporations to thrive in Nigeria, polycentric and geocentric approaches to staff selection be adopted. They increase the chances of technology transfer. The best strategy again is for developing countries like Nigeria to initiate standard policies that will be binding on the operations of multinational corporations in Nigeria.

### **2.1.5 The WTO and Organizational Performance**

The World Trade Organization (WTO) is a 164-member international organization that was created to oversee and administer global trade rules, serve as a forum for trade liberalization negotiations, and resolve disputes. The United States was a major force behind the establishment of WTO in 1995, and the rules and agreements resulting from multilateral trade negotiations since 1947. The WTO encompassed and succeeded the General Agreement on Tariff and Trade (GATT), established in 1947 among the United States and 22 countries. Through the GATT and WTO, the United States with other countries sought to establish a more open rules-based trading system in the Post-War era to foster international economic cooperation and prosperity. Today, 98% of global trade us among WTO members.

The WTO is unique among international organizations in not having either an independent evaluation office or an internal review mechanism that assesses the operation of the institution. Periodic assessment of the WTO's institutional performance can help identify both good practices and reasons why performance in some areas may be below what is anticipated. The WTO's effectiveness as a negotiating body for broad-based trade liberalization has come under intensified scrutiny, as has its role in resolving trade disputes. WTP members have struggled to reach consensus over issues that can place developed country members against developing country-members (such as agricultural subsidies, industrial goods tariffs, and intellectual property rights protection). The institution has also struggled to address newer trade barriers, such as digital trade restrictions

and the role of state-owned enterprises in international commerce including the monitoring of the activities on Multinational Corporations (MNCs) in developing country-member states, which have become more prominent issues in recent years. Global supply chains and advances in technology have transformed global commerce, but trade rules have failed to keep up with the pace of change; since 1995, WTO members have been unable to reach consensus for a new comprehensive multilateral agreement. As a result, many have turned to negotiating FTAs and regional agreements, including those pursued by the United States and EU, newer rules may vary significantly. Plurilateral negotiations, involving subsets of WTO members rather than all members, are also becoming a popular forum for tackling newer issues on the trade agenda.

### **2.1.6 Ways of Minimizing Negative Effects of Multinational Corporations in Nigeria**

These negative effects earlier discussed in this study affecting multinational corporations (MNCs) operations in Nigeria can be reduced through the instrumentality of:

- i. Government active intervention and honest participation: Although government herself is guilty of unethical practices like bribery and corruption but she can still influence operations of multinational corporations positively in order to reduce the magnitude of their nefarious activities on Nigerian economy. Assistance from government can be planned and programmed as a component in a rational environment program. This can be achieved in three broad ways: Inform, sensitize and engage businesses in dialogue and negotiations concerning voluntary initiatives. Secondly, offering incentives and assistance to firms seeking to adopt more environmentally-responsible business models. Thirdly, reinforcing monitoring environmental conditions and enforces sanctions (Mazurkiewicz, 2003).
- ii. Strict penalties and sanctions: These have the capacity to curb corrupt practices. Government should impose more severe penalties on the directors of companies and threats of corporate closure.
- iii. Corporate Environmental Policy: Companies committed to reducing their environmental impact usually create a set of environmental principles and standards, often including formal goals. At minimum, most of such sentiments express a company's intentions to respect the environment in the design, production and distribution of its products and services to commit the company to be in full compliance with all laws and go beyond compliance whenever possible, and establish an open-book policy whereby employees, community members and others can be informed of any potentially-adverse effects the company might have on the environment.
- iv. Environmental Scanning: Before a company attempts to reduce its impact on the environment, it is essential that it first gains a full understanding of the impact of its products on the environment. For most companies, this usually involves some kind of environmental audit. The goal of audits is to understand

the type and amounts of resources used by a company, product line or facility, and the types of waste and emissions generated. Some companies also try to quantify this data in monetary terms to understand the bottom-line impact. This also helps to set priorities as to how a company can get the greatest return on its efforts (Onwuchekwa, 2000).

- v. **Employee Training Involvement:** Leadership of companies recognizes that to be effective, an environmental policy needs to be embraced by employees throughout the organization not just those whose work is related to the environment. To do that, companies should engage in a variety of activities, especially education, to help employees understand the environmental impact of their jobs and to support their efforts to make positive changes. Some companies go further, helping employees become more environmentally-responsive throughout their daily lives, helping them build a true environmental ethics. Besides education, many companies create incentives, rewards and recognition programs for employees who demonstrate their environmental commitment.
- vi. **Green Procurement:** To help ensure that their products and processes are environmentally- responsive, many companies seek to buy greener products and materials from their suppliers. Some companies participate in buyers' groups in which they leverage their collective buying clout and power to push suppliers to consider alternative products and processes.
- vii. **Green Products:** Products themselves may be made more environmentally-friendly, with regard to, for example, the control of emissions, noise, reduced health and safety risks, and reduced energy requirements.
- viii. **Effective Regulatory Mechanism:** Investors must be thoroughly screened so that genuine ones can be allowed to do business. This will ensure that the kind of investment that is welcomed is one that can complement the developmental objective of the host country and equally ensure that only multinationals that meet the developmental objectives are welcomed.

## **2.2 Theoretical Framework**

Three theories were reviewed to explain the relationship between multinational corporations and the socio-economic development of Nigeria. These theories include: the New Trade theory, Unequal Exchange and Dependency theories.

### **2.2.1 New Trade Theory**

New Trade Theory was propounded by Tejvanne and Pettinger (2013). It proposes a critical factor in determining international patterns of trade are the very substantial economies of scale and network effects that can occur in key industries. These economies of scale and network of effects can be so significant that they



outweigh the more traditional theory of comparative advantage. New Trade Theory is a factor that explains the growth of globalization which multinational corporations serve as main agents. It means that poorer, developing economies may struggle to ever develop certain industries because they lag too far behind the economies of scale enjoyed in the developed world. The theory suggests that government might have a role to play in promoting new industries and supporting the growth of key industries. A developing economy may need tariff protection and domestic subsidy to encourage the creation of capital-intensive industries. If the industries get support for few years, it will be able to exploit economies of scale and then be competitive without government support. New Trade Theory is not primarily about advocating government intervention in industry, it is more a recognition that economies of scale are a key factor in influencing the development of trade. It also suggests that free trade and laissez-faire government intervention may be much less desirable for developing economies who find themselves unable to compete with established multinationals.

### **2.2.2 The Unequal Exchange Theory**

The Unequal Exchange Theory equally explains situations in Nigeria. According to Arghiri (1972), underdeveloped countries are exploited through the process of unequal exchange. In the realm of international trade, when the former sell their commodities below value and at the same time buy commodities from the developed countries above the value, this provides a veritable means of under-development. In Nigeria, our crude oil is sold at a much-reduced price to the Multinational Corporations who refine it and sell it to us at very exorbitant prices.

### **2.2.3 Dependency Theory**

The third theory under review is the Dependency Theory. This study is in fact anchored on Dependency Theory developed by Boxborough (1974). According to the theory dependency implies a kind of parasitic relationship that exists between the highly-industrialized and the less-developed ones in a manner that ensures the continuous advancement of the former to the detriment of the later. The theory defines the relationship between Nigeria and the multinational corporations (MNCs), especially their owners. This theory represents the complex politico-economic relationship that binds the advanced capitalist countries of the Center and other countries in the periphery such that the movement and structure of the former decisively determine those of the later in a fashion somehow detrimental to the economic progress of the other societies. Countries such as Ghana, that once experimented with the dependency theory have achieved neither prosperity nor greater economic independence. Rather they have experienced much poverty, misery and greater dependence on international aid and charity (Ahiakpori, 1985).

### 2.3 Related Empirical Studies

Eckerberg et al, (2015) conducted their study on the impact of multinational corporations (MNCs) on the socio-economic development of Kenya adopting 32 textile manufacturing firms quoted on the Kenya Stock Exchange. They employed the descriptive survey research design. Primary data for the study was based on structured questionnaire distributed to employees of these firms. The population for this study was 246 employees arrived at through stratified random sampling. The study data was analyzed using the Chi-Square statistic. The finding of the study was to the effect that the activities of the MNCs in Kenya have not yielded the expected positive impact on their economy. It was recommended that the government of Kenya should formulate better and stringent policies that would regulate the activities of these MNCs in the country directed towards improving their economy.

The World Commission Report (2014) in their survey on the operations and activities of multinational corporations (MNCs) in developing countries noted that the business relationships between these foreign corporations and the African continent have been everything but retrogressive. The survey incorporated a study of 49 multinational corporations un 15 less developed countries. The study adopted participant observation and interview methodology to generate data for the study. Regression analysis statistic was employed in the analysis of research data. It was recommended that home countries of these multinationals should closely monitor the activities of these subsidiaries across the nations to ensure that they operate according to regulations establishing the parent companies as well as ensuring that they abide by agreements entered into by them with governments where these subsidiaries are domiciled.

A related study to the World Commission Report was conducted by Johnson & Dahlstriom (2014) using 25 developing countries in Latin America and sub-Saharan Africa as case study. The study investigated the effects of the activities of multinational corporations on the socio-economic-cultural life of these less developed economies. Descriptive research design methodology was employed while the population sample size of 5,200 was adopted using snow-ball sampling technique. The PL-SEM model was employed in the analysis of data. It was revealed that the business relationships between the MNCs and these developing countries have been parasitic in nature creating a situation of dependency rather than cooperative or beneficial. The study recommended a better business relationship and suggested a stakeholder approach to doing business with these countries.

Chinwe & Ojebe (2020) in their study of 50 multinational corporations (MNCs) in Europe opine that for developing countries to capitalize effectively, regulatory laws become essential. The absence of law and order can often lead to corruption in government and MNCs, which can later hinder any possible economic

development. Further findings revealed that industrial corporations may deplete resources and harm host countries that lack effective regulations. Nonetheless, Mayer and Jebe (2010) in their study asserted that there are very few international environmental treaties for MNCs. The reality is that most environmental standards and regulations vary from one nation to the next.

The general belief that multinational corporations (MNCs) invest in countries characterized by good governance was the subject matter of the study conducted by Globeman and Shapiro (2003; Cadbury, 2002; King Report II, 2000; World Bank, 2002 & Gani, 2007). According to these studies, government entails capturing many modalities of coordinating, managing, and steering activity in public affairs. Globerman & Shapiro in their study agreed that preserving one's investments is impossible under dysfunctional governance. According to the study by Cadbury (2002), corporate governance is key to upholding a steadiness between firms, communal aims, and economic and social goals, to establish aligned interests among individuals, corporations and society. According to the study carried out and translated into the King Report II, (2002), companies including MNCs should not in any way separate themselves from the societies and environments in which they operate; this generally implies that, while the board is accountable to the company structures, it must also act responsibly to all stakeholders. A decent relationship between MNCs and governments of host countries can only be realized when a company is aware of and responds to social issues and prioritizes ethical issues, as evident in the stakeholder theory (King Report I, 1994).

## 2.4 Summary of Reviewed Literature

This section reviewed extensively the related previous works carried out in this area of study. The literature review was sub-divided into four sections; that is, the conceptual review, which chronicled the review of the relevant concepts as used in the study, basically the concepts of the historical evolution of multinational corporations in developing countries, multinational corporations and socio-economic development in Nigeria; negative impacts of multinational corporations in Nigeria and the ways of mitigating and improving the negative impacts of multinational corporations on the socio-economic development of Nigeria.

The theoretical framework, discussing the New Trade theory, Unequal Exchange Theory and the (Dependency Theory), which theory under-pinned or anchored this study; and finally, discussions on the related empirical studies chronicled from previous researchers in areas related to the present study, highlighting their research techniques, tools of analysis, findings and conclusions drawn therein.

### 3.0 Methodology

The researcher in this section examined the issues concerning research design, population, sample and sampling technique that will be used in this work. The researcher also examined the instrument for collecting data, the validity of the instrument, reliability of the instrument, procedure for data collection, method of data analysis and limitation of this study.

The design of this study is a descriptive survey method. It is used to describe what is existing and to answer the research questions raised by the researcher for the study. The population of this comprised of 1,200 staff of Nigerian Breweries PLC including Management, staff and other staff of the organization. In order to achieve a sample size that is representative of the total population, a 10% of the total population was adopted totaling one hundred and twenty thousand (120) respondents which is made up of 70 males and 50 females.

Simple random sampling technique was adopted for the study. In order to achieve a sample size that is representative of the total population, the researcher adopted a 10% of the total population totaling (one hundred and twenty) staff and including the Management of the Nigerian Breweries PLC for the study. A research instrument is a data collection tool that is used to elicit information in order to achieve the desired research objectives (Ihemeje, Umeh and Ogbanje, 2011). One research instrument was used for this study which was Questionnaire and it is titled: The Impact of Multinational Corporation on the Socio-Economic Development of Nigeria (A Case Study of Nigerian Breweries PLC).

The reason for using questionnaire was based on the following advantages. Firstly, it can give objective and reliable information if it is carefully and well-constructed. Secondly, it is relatively effective and easier to score and administer. Questionnaire is a good representation of group test and owing to the nature and diversity of the population questionnaire method becomes necessary. The questionnaire is divided into three sections to enable the researcher obtain information from the respondents, the questionnaires will be designed in such a way that it provided the following: section (A) the respondents' personal data, section (B) the respondents' understanding the subject matter of the study; section (C) the impacts of Multinational Corporation on the socio-economic development in Nigeria.

The five Likert scale (strongly agreed, agreed, undecided, strongly disagreed and disagreed) questionnaires will be adopted by the researcher. The Likert scale contain a list of statement that has relationship with the issue in the question, it does not only allow the respondent to check those statements in which they agree or disagree but allows the respondents to state the degree of agreement or disagreement with every statement (Osuala, 2007).

Face and content validity is employed in this study; the researcher employed the help of some senior lecturers from the Faculty of Management Sciences (FMS), National Open University of Nigeria (NOUN). After going through the work, they advised the researcher to see a statistician who will scrutinize the objectives of the study, research questions, research hypotheses as well as the methodology of the study. The draft questionnaire was also presented to the project supervisor for necessary corrections and adjustments before the final copy was printed out for use in the research work.

In order to establish the reliability of the instrument, pilot study was carried out. The essence of pilot study was to test the adequacy and suitability of the instrument in measuring what it is supposed to measure and to ascertain any difficulty that the researcher may encounter. For the purpose of this, a total of (12) copies of the questionnaire representing 10% of the total population of study was administered to selected Management Staff and other employees of the organization. They were filled under the supervision of the researcher. The filled questionnaires were collected and subjected to statistical analysis in order to determine the reliability coefficient of the instrument as well as the internal consistency of the items within the instrument.

The data collected from the pilot study was analyzed using Cronbach Alpha technique and reliability index of 0.85 was obtained. Bennett (2006) testified that for a scale to be considered reliable, it should have a reliability index value of 0.5 to 1. With the level of reliability index of 0.85, the instrument was considered reliable for use in the main study.

To administer the validated instrument of the study, an introductory letter was collected from the head of department and presented to the Management staff and other employees of the organization. These respondents were drawn from the Management, staff and other employees in the organization. The research assistants were educated on how to distribute and collect the questionnaires and who is qualified to be given the questionnaire.

The analysis of data for this study was done based on the hypotheses formulated. The researcher used descriptive statistical method for data presentation. Measures of relationship between the variables were being carried out using independent t-test. The simple percentage, mean score and standard deviation was used to answer the research questions. All hypotheses were tested using the independent t-test at 0.05 alpha level of significance like what is obtainable in other social sciences. The reason for adopting these statistical tools is to test whether there will exist some significant differences or not and either to retain or reject the null hypotheses.

Conducting effective research in Nigeria is not easy due to the fact that most people are reluctant to release information needed for research study. The researcher devoted enough time and effort in making sure that enough data are gathered to accomplish the research work. There is also the constraint of time as the researcher has to carry out the research work alongside his official duties.

#### 4.0 Data Analysis, Interpretation and Discussion of Findings

This chapter presents the data collected, the analysis carried out and the discussion of the results obtained. The analysis is presented in sections. The first section presents the frequency and percentage distribution of the data respondents and nominal questions as responded by respondents. The second section presents the answers to the research questions using descriptive parameters of mean scores and standard deviation. The third section presents the testing and interpretation of the two null hypotheses using parametric statistical techniques of independent t-test. All hypotheses were tested at 0.05 alpha level of significance. The major findings are then revealed before the discussion of the major findings.

#### 4.1 Analysis of Demographic Information

This section chronicled the demographic information, impact of Multinational Corporations on the Socio-economic Development of Nigeria adopting the Nigerian Breweries PLC as a case study, percentage of environmental factors, survival and growth dimensions and computation of Z-value at 0.05 level of significance (2-tailed test). Demographic statistics was used to analyze the demographic information of the respondents; these included the use of frequency and percentage.

**Table 4.1: Demographic Information about the Respondents**

Variables	Frequency Distribution	Percentage (%)
Male	70	58.3
Female	50	41.7
Total	120	100
Marital Status		
Single	40	33.3
Married	50	41.8
Divorced	20	16.7
Widow	10	9.2
Total	120	100
Educational Qualification		
M.Sc./MBA	20	16.7
B.Sc./BA/B/Ed./HND	50	41.7
ICAN/NIM/CIPM/CIBN	10	9.2
OND/NCE	40	33.3
Tota	120	100
Work Experience		
Less than 2 yrs	30	25.0
yrs - 4 yrs	40	33.3



5 yrs – 7 yrs	35	29.9
8 yrs & above	15	13.5
Total	120	100
Age Limit		
Less than 25 yrs	15	13.5
25 yrs – 35 yrs	40	33.3
36 yrs– 45 yrs	30	25.0
46 yrs – above	35	29.9
Total	120	100

**Source: Field Survey, 2024**

The above table has information about the demographic status of the respondents. In the gender cadre, 70 respondents were male representing 58.3 % of the respondents while 50 representing 41.8% were female which showed that male respondents are the majority. It is also evident that in the marital status, it is dominated by married respondents with 50 respondents representing 41.7 % followed by single respondents with 40 respondents representing 33.3%, 20 respondents representing 26.7% were divorced, 10 representing 9.2% were widow and there is no record of widower. The implication of this information is that the respondent's emotional crisis or trauma is minimal and relatively stable which means they are in best frame of mind to answer questions without prejudice. The educational qualification responses has that majority of the respondents are with first degree with 50 respondents representing 41.7% followed by OND/NCE respondents with 40 respondents representing 33.3%, it is crystal clear that the respondents have what it takes to understand the questions. Without undue influence and also know the confidentiality and the essence of research hence would not hoard any information. From the work experience responses, majority of the respondents were found in the range of 2yrs - 4yrs with 40 respondents representing 33.3% followed by 35 respondents in the range of between 5 yrs - 7 yrs representing 29.9%. It can then be deduced that the years of experience is adequate to know, identify and express the likelihood effect of environmental factors in SMEs business survival and growth. From the age limit responses, the respondents in the age bracket of 25 - 35 yrs were found to be the majority with 40 respondents representing 33.3%, the implication is that the respondents are matured and can give candid information without fear or favor.

#### 4.1.2 Answering of Research Questions

This section presents the result of this study based on the data analysis. They were presented on the basis of the five research questions and two null hypotheses that guided the study. The researcher used 3.00 as the mean otherwise known as decision mean since the instrument was structured along a modified five-point Likert scale structure to take decision on whether to accept or reject the research questions after comparing it with the qualitative mean. Therefore, a mean score of 3.00 indicate positive response to the research question and accepted while a mean score below 3.00 indicate negative answer to the research question and rejected.

This is shown below:

- SA                    5 points
- A                     4 points
- UD                   3 points
- SD                   2 points
- D                     1 point

$$\frac{.....5 + 4 + 3 + 2 + 1.....}{5} = 3.00 \text{ Decision mean}$$

#### Research Question One:

What is the impact of Multinational Corporations (MNCs) on the integration of international and indigenous businesses in Nigeria using the Nigerian Breweries PLC as a case study?

**Table 4.1.2: Mean and Standard Deviation Ratings of the Impact of Multinational Corporations (MNCs) on the integration of international and indigenous businesses in Nigeria using the Nigerian Breweries PLC s a case study**

S/No.	Questionnaire Items	Mean	SD	Decision
1.	There are many firms offering products and services similar to ours in the market	4.22	1.05	Agreed
2.	Firms in our industry are very aggressive in marketing their products/services	3.99	0.97	Agreed
3.	Our competition control is a very small market share in our industry	4.01	0.99	Agreed
4.	Our industry attracts many new organizations every year	4.05	1.05	Agreed
5.	It is not easy for our customers to find an alternative supplier offering same products	4.10	1.07	Agreed

Table 4.1.2 indicates that the impact of multinational corporations (MNCs) in the integration of international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC. This is represented by the mean ratings of between 3.99 and 4.22 while the standard deviation (SD) ranges between 0.97 and 1.05 respectively. The items are therefore rated Agreed (A) by the employees of Nigerian Breweries PLC.

### Research Question Two:

What are the impact of the socio-economic benefits behind the integration of multinational corporations (MNCs) on the international and indigenous businesses in Nigeria using the Nigerian Breweries as a case study?

**Table 4.1.3: Mean and Standard Deviation Ratings of the Impact of socio-economic benefits behind the integration of MNCs on the international and indigenous businesses in Nigeria using the Nigerian Breweries PLC as case study**

S/No.	Questionnaire Item	Mean	SD	Decision
6.	The socio-economic benefits on the integration of MNCs on the integration of international and indigenous business is numerous	4.31	1.08	Agreed
7.	The less developed countries (LDCs) enjoy little or no socio-economic benefits from the MNCs	4.20	1.10	Agreed
8.	The MNCs enjoys the economic benefits alone to the detriments of LDCs	3.46	1.06	Agreed
9.	The WTO as a monitoring body should help curtail the excesses of MNCs negative impacts on LDCs economies	3.56	1.09	Agreed

The respondents agreed that there is a strong impact of the socio-economic benefits on the integration of MNCs on the international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC. This is evidenced in Table 4.1.2 by the mean ratings of between 3.46 and 4.31 and the standard deviation (SD) of between 1.05 and 1.10 respectively. The items are therefore rated Agreed (A) by the Nigeria, Breweries PLC.

**Research Question Three:**

What is the impact of WTO in the integration of international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC?

**Table 4.1.4: Mean and Standard Deviation Ratings of Impacts of WTO in the integration of international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC**

S/No.	Questionnaire Items	Mean	SD	Decision
10.	The WTO has been helpful in monitoring the activities of MNCs in less developing countries (LDCs), particularly in Nigeria	3.99	0.95	Agreed
11.	The WTO finds it difficult to reach consensus on trade tariffs and other trading agreements with member-countries	4.01	1.01	Agreed
12.	The WTO is today dictating the pace of international businesses at the world market	3.92	1.08	Agreed
13.	The presence of WTO had curtailed the excesses of MNCs operations in LDCs particularly in Nigeria	3.90	1.09	Agreed

Respondents in Table 4.1.4 above accepted that the WTO has not lived up to expectations in their monitoring responsibilities on the Multinational Corporations (MNCs). This is evidenced with the high mean ratings ranging between 3.90 and 4.01 and the standard deviation (SD) of between 0.95 and 1.09 respectively. Hence, all the items were favorably rated Agreed (A) by the respondents.

**Research Question Four:**

What is the impact of government attitude on the integration of international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC?

**Table 4.1.5: Mean and Standard Deviation Ratings of the Impact of government attitude on the integration of international and indigenous businesses in Nigeria with particular reference to the Nigerian Breweries PLC**

S/No,	Questionnaire Items	Mean	SD	Decisions
14.	The government and the MNCs' relationships has been cordial	4.24	1.05	Agreed
15.	Government policies on the monitoring and control of MNCs activities in Nigeria is ineffective	3.92	1.07	Agreed
16.	Bribery and corruption has been identified as responsible for weak government regulatory policies on the activities of MNCs in Nigeria	3.99	1.10	Agreed
17.	The government is expected to wake up to make stringent policies on the activities of MNCs that will improve the economy and promote growth of indigenous firms			
18.	Government's poor attitudes to wanton environmental destruction and economic losses to our nation should be addressed	3.91	1.06	Agreed

Table 4.1.5 indicates that the respondents are of the opinion that the government's attitude and policies on the MNCs operations in Nigeria has been very poorly managed. Again, the impact of environmental factors was negative, environmental scanning is important for both prospective and existing MNCs and that business environment in Nigeria has been volatile, unpredictable and unfriendly. The mean score ratings range between 3.91 and 4.24 while the standard deviation (SD) range between 1.05 and 1.10 respectively

### 4.2 Test of Hypotheses

The following hypotheses will be tested at 0.05 level of significance.

**Table 4.2: Tests of Hypotheses on Ho1 and Ho2**

S/No.	Hypotheses	Category of Respondents	N	- X	SD	T-CD	DF	T.TAB	Decision
1.	There is no significance difference between the opinions of male and female employees of the Nigerian Breweries PLC	Academic Non-academic	70 50	4.01	1.05	-4.62	541	1.96	Accepted
2.	There is no significant difference between the opinions of Top-Management and other employees of the Nigerian Breweries PLC	Other Employees Top-Management staff		3.89	1.01	-1.62	541	1.96	Accepted



#### 4.2.1 Hypothesis One (Ho1):

Hypothesis (Ho1) states that there is no significant difference between the opinions of both male and female staff with regards to the impacts of Multinational Corporations (MNCs) on the socio-economic development of Nigeria with particular reference to the Nigerian Breweries PLC. The above hypothesis was tested at 0.05 alpha level of significance. From the Table 4.2 above, the calculated t-values (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho1) is therefore accepted.

#### 4.2.2 Hypothesis Two (Ho2):

Hypothesis (Ho2) states that there is no significant difference between the opinions of academic and non-academic staff with regards to the impacts of Multinational Corporations (MNCs) on the socio-economic development of Nigeria with particular reference to the Nigerian Breweries PLC. This was tested at 0.05 alpha level of significance. From Table 4.2 above, the calculated t-value (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho2) is therefore accepted. Respondents therefore accepted that in all clusters, there is no significant difference between the opinions of male and female staff and Top-Management and other employees of the Nigerian Breweries PLC.

#### 4.3 Summary of Major Findings

The main purpose of this study was to examine the impacts of Multinational Corporations (MNCs) on the socio-economic development of Nigeria with particular reference to the Nigerian Breweries PLC. From this study, it has been found that all the four independent variables are statistically significant in influencing the choice of strategic response of MNCs which led to the rejection of the null hypotheses for this study. This therefore means that the four variables are constituents of competition and have converged to the study's hypothesized model. This finding is important considering that this study was done in Nigeria and the convergence of the four variables into a single factor is concurrent with findings of studies done in other parts of the world such as USA and Germany (Bernard and Koerte, 2007).

The study has revealed that the best predictor of strategic response to be chosen by a MNC in Nigeria is the firm's marketing experience. This means that a prior exposure of an organization into a given industry is very important in informing competitive strategies to be employed. The longevity of involvement in a certain industry is also critical to a firm, mainly because such a firm knows the competition dynamics, the market trends and consumer behavior that are critical in determining the choice of a competitive strategy. This finding has a link with the strategic choice model advanced by Kochan (1984) and the dynamic fit model (Nissen,

2009). was also found that there is stiff competition among the MNCs in Nigeria as indicated by the presence of three forces of industry competition in the Nigerian market. These findings are linked to Michael Porter's theory of industry forces that include threat of new entrants, threat of substitute goods and threat of internal rivalry (Porter, 1980). Going by this theory, it was however found that the intensity of competition in Nigeria is not due to the threat of powerful consumer or powerful supplier as the theory contends.

Another finding of this study that is linked to the model of generic strategies developed by Michael Porter (Porter, 2004) was that the majority of the Multinational Corporations (MNCs) in Nigeria employs cost leadership strategy to counter competition. This shows that cost products play an important role in the competitiveness of firms in Nigerian market. Moreover, going by this model, MNCs in Nigeria also employs product and market differentiation, which is an indicator that customers can be grouped into various product and market segments. Such segments will consider other factors other than offering price of the products.

It was found that a very significant number of MNCs in Nigeria employs relocation strategy, meaning that such industry players would either quit from the Nigerian market or shift from their main stay industries. This finding is important because the relocation of MNCs of that magnitude from Nigerian market has a big economic implication and will negate the efforts by the Nigerian Breweries PLC to realize Vision 2030 by attracting multinational corporations through the BPO and FDI initiatives (GOK, 2007). The choice of relocation strategy by MNCs by explains why in the last 10 years, some 10 MNCs have relocated from Nigeria to other investment destinations as found by Owour (2011) and Okoth (2010). The Nigerian market is not unique in this characteristic of industry players relocating because Bernard and Koerte (2007) report similar findings for the USA AND German Multinationals.

The study findings have also revealed that MNCs in Nigeria do not employ avoidance strategy to counter competition. This indicates that those tactics that would place an organization ahead of the other industry players like employment of high skill labor and capital-intensive undertakings do not make much difference to the consumer. It also means that production costs are restrictive in the Nigerian market, especially electricity, specialized labor and poor utility infrastructure as contended by Owour (2011). This finding could also be attributed to attractive government incentives that encourage foreign-owned companies to invest in their jurisdiction as was found by Blomstorm (2002) in his study.

#### **4.4 Discussion of Results**

Comparing the influence that marketing capabilities has in developed countries vs developing countries, the results suggest that marketing capability has a greater influence on MNCs performance in countries with higher

levels of economic development. This greater influence of marketing which comes when economic development is more advanced may be due to the assistance of economic development in permitting market-based capabilities to operate efficiently (Wu, 2013). With the development of the economy, the purchasing power of consumer rises, and consumer predictions vary (Wu, 2013). This finding gives wide support for the conceptual model and for the importance of including capability and performance.

Earlier researches on Marketing capability (Kotabe et al., 2002), were performed in Western countries, especially in the United States, and not enough consideration has been paid to developing countries (Steenkamp, 2005). Developing countries show substantial departures from the assumptions of theories developed for Western economies, and offer natural laboratories to test those theories' assumptions and predictions.

## **5.0 Study Implications, Conclusion and Recommendations**

The study sought to establish the impacts of Multinational Corporations (MNCs) on the socio-economic development of Nigeria using the Nigerian Breweries PLC as a case study. This study summarizes the study findings based on the four objectives of the study; the implications of the research findings; the conclusion drawn from the findings; the recommendations based on the study findings, and the provision for further studies in this area of research.

### **5.1 Implications of the Research Findings**

The findings of the study have some important strategic business management implications. The implication of the finding as they relate to the impacts of Multinational Corporations (MNCs) in Nigeria with particular reference to Nigerian Breweries PLC is hereby highlighted. The major implication of the findings of this study is that it provides a more comprehensive understanding of the negative impacts of the operations and activities of Multinational Corporations (MNCs) in Less Developed Countries (LDCs). The findings also reflect that a large proportion of MNCs in the LDCs are still seriously unable to treat the economies of where they are domiciled in the less developed countries (LDCs) as partners in progress. They only use them as avenues to make huge profits and ship their resources and huge funds generated back to their countries of origin. This is further supported by Okoronkwo et al., (2023) where they concluded that the activities and operations of MNCs have left the LDCs more-poorer than they met. Hence, they called for an urgent re-evaluation and overhauling of the policies and agreements entered between the governments of LDCs and the MNCs for a better and beneficial business relationship.

These findings signal a need for more robust financial and economic policies and collaborative supports from the originating countries where the MNCs functions. Also, poor managerial skills affect MNCs performance because many of the MNCs operating in the country do not have the necessary manpower to effectively carry on their operations in the LDCs; neither do they have confidence in fully engaging the local staff to man their major operations. Rather, the local staff are casualized and where they are placed in positions of authority are debarred from the mainstream activities of the MNCs and rather act as ceremonial figures. The result is that efficiency and effectiveness in service delivery are jeopardized on the altar of profiteering/

This finding is further confirmed by Ojutalayo et al., (2022) where they opined that apart from their inefficiency in operational management, they equally engage in wastage of the LDCs natural resources and are the worst culprits of environmental pollution. This issue raised is more prevalent in the upstream and downstream Oil and Gas sector where millions of barrels of Gas is flared on a daily basis. Moreover, there are incidences of oil spillages that destroys the natural ecosystems, waterways, living spaces and the entire environment making it inhabitable, A typical example of this wanton destruction of the environment and its ecosystem and mankind, according to Ojutalayo et al., (2022) is the negligent operations of Multinational Oil companies in the Niger-Delta Regin of Nigeria. These flagrant abuse and neglect of the well-being of the people and their environment for several decades now have contributed to the backwardness of the Region vis-à-vis other parts of the country. Dilapidated amenities where they exist at all affect the well-being of members of the communities where these Multinational Corporations (MNCs) operates. The MNCs are the worst culprits in the Corporate Social Responsibility (CSR) Ideology of adding value to the communities where they operate. The CSR ideology opines that it is the primary responsibility of business firms to give back to the communities where they operates by providing them with basic infrastructural amenities such as good road network, pipe-borne water, educational institutions, well-equipped hospitals, recreational facilities etc. According to Nkemjika et al., (2020), the MNCs have failed woefully in their primary assignment of humanistic approach to business relations. They called on the governments of Less Developed Countries (LDCs) to rise up to the challenge of effective monitoring and insistence on the duties of MNCs to their communities where they reside and operate and in extension to the improvement of their national economies. This they can do by enacting stringent policies detailing the modus operandi (mode of operations) for the MNCs which they must strictly abide by or risk their license being revoked and sent packing from these countries. They should made aware that enough is enough for their mismanagement of the LDCs natural resources and national economies.

## 5.2 Summary of Findings

Based on the literature reviewed, the following findings were articulated:

- a) Multinational Corporations (MNCs) have done more harm than good on Nigerian economy in terms of profit repatriation, environmental degradation, human rights violation, non-technology transfer, endemic bribery and corruption etc.
- b) That, most of the Multinational Corporations (MNCs) operations are imperialist and capitalist in nature;
- c) That it is only through active government participation and honest intervention in operations of these Multinationals that will minimize their nefarious activities on Nigerian economy;
- d) That adoption of ethnocentric approach of staff selection will not only favor a developing economy like Nigeria but also the polycentric approach that encourages filling the key positions from home country nationals should be entrenched and encouraged;

## 5.3 Conclusion

Multinational corporations (MNCs) are the major vehicles by which globalization is affecting businesses in different parts of the world. Globalization further makes the influence of multinational enterprises more pervasive and impacting. These corporations in spite of their huge benefits from their countries of operations have impacted negatively on their economy. Nigeria as a developing country can only benefit tremendously from operations of these multinationals if serious considerations are given to the environment in which they operate.

Since these operations are component of the society, they must subject themselves to the fair requirements of the society, for their relationship is paramount and reciprocal (the corporation needs the society just as the society needs the corporation). Business is not divorced from the rest of the society. How these corporations behave affect many people, not just shareholders (Angom 2012). A strong tie must exist between government and the various multinationals operating in Nigeria to ensure maximum cooperation and peaceful co-existence.

## 5.4 Recommendations Based on Research Findings

This study empirically examines the impact of Multinational Corporations (MNCs) on the socio-economic development of Nigeria adopting a case study of the Nigerian Breweries PLC. In view of the conclusion of this study, the following recommendations were stated:

- a) Representative of all stakeholders – employees, customers, society, government should be appointed as members of the Board of Directors of various multinational corporations, for direct representation and participation in the decision-making process;

- b) The polycentric model of staff selection should be imposed by government on these corporations which will be enshrined under the terms of agreement with the multinational corporations operating in Nigeria. This will enhance skill acquisition and ensure adequate transfer of technology;
- c) There should be interactive sessions on regular basis between the Multinational corporations and leaders of our country to proliferate understanding and enhance harmonious business relationship especially on moral and Ethical ground. Such interactions would impact positively on the ethical performance of both the companies in particular and the various corporations at large;
- d) Discrimination in employment policies and salaries of workers should be ruled out and adoption of polycentric and geocentric approach to staff selection should be encouraged to benefit our citizenry. A technology policy transfer should be formulated which will be binding on any company wishing to do business in Nigeria. This policy will boost our image and prestige thereby ensuring sustained economic growth and development which is our right from these Multinational Corporations (MNCs).

### 5.5 Suggestions for Further Studies

Future researchers are hereby called upon to conduct researches to measure the impact of Multinational Corporations (MNCs) on the political development in Nigeria to affirm the veracity of our findings and the performance of Multinational Corporations (MNCs) in Less Developed Countries (LDCs), particularly in Nigeria.

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## THE IMPORTANCE OF PRAYER IN THE VIEW OF SCIENCE

### **Sabrina Zahroh**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0007-3046-1325>

### **M. Farel Tsaqif**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0008-4651-9007>

### **Sulistiya Puji Astuti**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0005-7186-0379>

### **M. Rafi Fayyadh**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0009-7733-385>

### **Lia Fatra Nur Laili Kamalin**

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0006-6412-1495>

### **Abstract**

This study aims to explore the benefits of prayer from a scientific perspective, especially in the context of physical and mental health. The method used was a literature study through analysis of relevant academic journals. Selected articles were sorted based on methodological quality, topic relevance, and peer-review process. The data collected was analyzed qualitatively to find patterns and similarities in findings about the benefits of prayer in various aspects of life. The results showed that prayer has a significant impact on physical health through movements such as bowing, prostration, and sitting iftirasy that improve blood circulation, strengthen muscles, and prevent diseases such as rheumatism and osteoporosis. In addition, prayer also has mental benefits such as calming the soul, reducing stress, and increasing a sense of optimism. Prayer helps overcome psychological disorders by creating a sense of peace, increasing self-awareness, and strengthening the spiritual connection with Allah. In conclusion, prayer is not only a religious obligation, but also an effective means of improving physical and mental health based on scientific evidence. This study provides a deeper

understanding of the importance of prayer in daily life and opens up room for further research on the link between worship and human health.

**Keywords:** Prayer, Physical Health, Mental

## INTRODUCTION

Humans are the most perfect creatures of God's creation, because humans are equipped with reason and thought in contrast to other creatures of God. The purpose of humans created by God on this earth is none other than to worship God. One way humans worship is by establishing prayer. Prayer is one way to get closer to Allah. Prayer is the 2nd pillar of Islam that must be carried out by all Muslims. With prayer we will be given peace of mind and soul. In addition, prayer can also nourish the body because it is considered a sport in Islam. The movements in prayer involve various body movements, such as bowing, prostrating, and sitting between movements. These movements can involve various muscles and affect posture (Zahra, 2023) .

Indirectly, almost all prayer activities contain various virtues, especially in physical health in every prayer movement. With this, if more and more humans condition their hearts and minds and really understand that there is a connection between prayer which has a major effect on human physical health, then indirectly, all organs of the body carry out activities that can keep the body fresh and fit (Rofiqoh, 2020) .

Prayer has many benefits. Apart from calming the soul and mind, prayer can improve the body. There is a close link between health and a logically correct psyche. In medical science it is called psychosomatics. The treatment is not enough just to treat the nerves of the organs, but must also treat the soul and body. The soul can be helped by a psychologist, but oneself can also handle it by getting closer to Allah SWT. Through prayer, the movements of prayer can nourish the body. In America there are many doctors who specialize in this field. Some well-known diseases to be treated are blood pressure, digestive wounds (dyspepsia), eye diseases, chronic headaches, and others that can be cured by prayer (Fajrussalam et al., 2022) . Prayer movements performed solemnly also have a significant effect on a person's health, both physically and mentally (Zahrah et al., 2023) .

## METHOD

This research method uses a literature review approach to analyze scientific journals that discuss the importance of prayer according to scientific views. The research began with a search for relevant articles through academic databases such as Google Scholar with criteria of topic relevance, methodological quality, and peer-review process. The selected articles were qualitatively analyzed to explore the benefits of prayer in physical, mental, and spiritual aspects. In addition, a synthesis method was used to identify patterns and similarities in findings, as well as differences in views between studies. These findings were further analyzed to explore the positive impact of prayer in the context of physical, psychological, and social health. This research

aims to provide a comprehensive understanding of the benefits of prayer based on scientific evidence and make new contributions to the study of human health and well-being.

## RESULTS AND DISCUSSION

### 1. Definition of Prayer

Prayer is one of the pillars of Islam that is commanded by Allah Swt. to be performed by His servants for five times a day and night (Sado, 2015) . Prayer is the main obligation for a Muslim, after he utters two sentences of shahada which is a condition of entering Islam. Prayer is a very noble worship, loved, and favored by Allah SWT. Prayer occupies the highest position in Islam as a pillar of religion, as an indication of the identity of a person who believes or disbelieves, and is also the first worship required by Allah SWT. Prayer is an act of worship that consists of actions and words that begin with takbir and end with giving salam. In prayer there are certain prayers, conditions and pillars. Prayer is a recitation and movement that is important for physical and spiritual needs, which is not just a recitation and movement consisting of takbiratul ihram, bowing, prostration, sitting, and greeting. But it also contains nutrients that are very important for physical and spiritual health. The fulfillment of these physical and spiritual health needs can affect the balance of the body.

Prayer is a device that brings a servant to his god. It is also an obligatory link to build a religious shield for a person. Therefore, prayer is a tool for Muslims to deal with Allah SWT. Prayer is obligatory. The obligation to perform prayers, one of which is fardhu prayer, is an easy way from health and soul. Therefore, almost all the pillars of prayer contain physical health in every prayer movement. All activities in prayer become cool and order that includes the veins and joints in our body. Therefore, this is due to the burning of calories when a person carries out activities in prayer (Fajrussalam et al., 2022) .

The meaning of prayer is meeting with God. The prayer service is basically an arena to bring one's relationship with God closer, or between the Creator and His creatures. And with this, the heart will always face all the problems of life with a sense of optimism, patience and willingness so that the peace and tranquility of the heart that everyone always craves will always accompany him in his life (Dedi ardiansyah & Miftahul Ulum, 2023) .

### 2. Prayer According to Scientific Views

#### a) Physical Health Aspects

According to Harold Koenig, Medical Professor of Psychiatry at Duke University School of Medicine, USA, "Religious people tend to live longer and are also healthier for longer. They also don't smoke and drink alcohol". In fact, religious people also get sick less often based on separate results in a number of studies. Here are some of the results:

1. People who rarely worship will spend an average of three times longer in the hospital than people who worship regularly.
2. Patients with heart problems are 14 times more likely to die after surgery if they do not follow a particular religion.
3. Elderly parents who rarely or do not worship are twice as likely to have a stroke as those who do.
4. Religious people have a 40% lower death rate from cardiovascular disease and cancer

In addition, in terms of physical health, prayer has the following benefits:

1. Prayer improves Blood Circulation and Liver Function Health

In the world of health research, they have concluded that these ruku' and sujud movements in prayer performed by a person for a long period of time can maintain the function of the liver and arteries. Other movements can also prevent the risk of high blood pressure. Performing prayers regularly and on time can maintain and improve the performance of the body's organs. Prayer movements can also improve blood circulation. Movement in prayer also serves to reduce the risk of disconnection of blood vessels and reduce the risk of disruption in the performance of the liver.

2. Prayer Helps Cure Rheumatism

Rheumatism is a disease of joint pain or osteoarthritis. Complaints that occur in a person are pain in joints such as hinge joints, joint movement restrictions, usually joints in the feet or hands, stiffness in the joints if you rest too long, swelling of the joints, disturbance when walking, pain when pressed, deformed joints. Meanwhile, the joints that are often affected by osteoarthritis are the joints in the fingers, hip joints, and knee joints.

The results of research conducted by scientists reveal that prayer can cure rheumatism, especially in the spine. Because when performing prayer movements such as ruku' will pull the spine and that pull is what reduces rheumatism. In addition, doctors also advise patients that there is no better solution than to pray regularly. Because the movements in this prayer can restore muscle function in humans. Among the movements of prayer that can cure rheumatism are ruku', standing upright, and prostration. These movements if done repeatedly with tu'maninah can also be therapeutic.

In addition to the above positions, another position in prayer that can be used to cure rheumatism is when sitting between two prostrations or sitting atahiyat akhir. When one sits iftirasy, one sits with the muscles in the groin, in which there are nerves in the groin, above both heels of the feet. The heels are covered with a muscle that acts as a pillow. So that when sitting the heels press on the muscles of the groin.

### 3. Helps prevent back and bone disease (Osteoporosis)

The conclusion of world health experts is that prayer is a good way to get rid of back and bone pain caused by muscle imbalance. Movement in prayer, which is performed five times a day, is a very good free treatment therapy for those affected by bone disease or osteoporosis. Because in prayer there are movements that are very large benefits for the health of the human body, and also to improve the muscles in the back.

In addition, the movements in prayer can also improve muscle tissue in the body, especially the muscles found in the limbs. For people who have had surgery on their bones, prayer can also be useful for balancing the body. All of the above benefits result from most of the movements of bowing, prostrating, and standing for long periods of time (Fajrussalam et al., 2022) .

### 4. Prayer Treats Heart Disease and Cancer

Scientific studies show that prayer can protect a person from various diseases that attack the human body. It increases the body's endurance, and can also help the heart. Prayer regulates blood flow and delivers it to all the organs of the body throughout the day. The most difficult thing for the heart is pumping and delivering blood to the organs above it. In prayer, the movement of prostration helps the heart work harder to fight the earth's gravity as it has to drain it to a higher place. Since the organs that should be on top are below the heart during prostration, the blood flows to the higher organs. Therefore, Islam encourages its followers to prostrate for a longer period of time as it is a valuable act of worship and nourishes the body, by reducing the burden on the heart.

Prayer can also help prevent cancer. One can feel calmer and relieved from the pressures of life that cause stress by performing special prayers or tumanina. It is mental stress that puts a person at risk of various diseases and accelerates the development of cancer cells. Because in the human body there are already seeds of cancer cells, how cancer cells grow and develop. In a stressful situation that prolonged, characterized by high cortisol secretion, the hormone cortisol functions as an inhibitor of the immune system, stopping the growth of lymphocytes. As a result, immunoglobulins cannot be released. If immunoglobulins are not induced, the immune system will decline, increasing the risk of infection and cancer. Everyone knows that abnormal cell growth causes cancer and heart disease, but people who pray sincerely will be free from all diseases. Prayers that are performed correctly, consistently, khusuk, and ikhlas can increase positive perceptions and motivation, which in turn results in effective resistance mechanisms (Nasikhah, 2024) .

#### b) Aspects of Mental Health

##### 1. Prayer has the virtue of calming the heart



Because, the essence of prayer itself is as a place to complain about a servant to Allah SWT. As found in the Al-Quran in surah Ar-Ra'd verse 28 which means: "(That is) those who believe and their hearts become peaceful with the remembrance of Allah. Remember, it is only by remembering Allah that the heart is at peace." Prayer has become a necessity rather than a burden or an obligation. Prayer illustrates one's understanding of the workings of this universe which gives man peace and stability. Because humans are creatures that have instincts of anxiety and expectation. According to the science of mental religion, when a person prays with khusyu, all his thoughts and feelings will be released from all the affairs of the world that make him disturbed, his soul is calm and feels peaceful in his heart. please paraphrase

## 2. Prayer fights stress and fear

Many Muslims neglect prayer on the grounds that work cannot be left behind which makes prolonged stress. Whereas by doing prayer will facilitate all matters faced, one of which is about work. No matter how busy humans are, they must prioritize prayer because it is an obligatory act of worship. To solve this problem, it is necessary to discuss the benefits of prayer in the aspect of mental health. Therefore, it is very important for humans, especially Muslims, to know how important prayer is in mental health. Prayer can help a Muslim to fight stress and fear. As said through His words contained in surah Al-Baqarah verse 239: "If you fear (there is danger), pray while walking or riding. Then when it is safe, then remember Allah (prayer), as He teaches you what you do not know" . And many psychological studies support this, such as McCullough's research which found that when a Muslim is stressed, by praying he will be able to see the stressful situation from a positive direction so that it can calm him physically and psychologically.

## 3. Prayer can be an experience of peace and inspiration

Prayer brings Muslims closer to their Lord and protects them from loneliness and isolation. This closeness to God during prayer is allegedly able to heal a person, because he believes that his God will always be with him and help him.

## 4. Prayer can be a resolution and solution to problems

Prayer makes a person have confidence in facing a problem. It is shown that there is a relationship between prayer and breadth of life and peace, and is evidenced in research on Muslim elders which shows that prayer is able to increase their life satisfaction and well-being.

## 5. Prayer can create humility and interpersonal sensitivity

Spiritual energy is able to foster humility and empathy, With prayer, a Muslim will be able to appreciate the power of God so that he is able to humble himself and minimize egoism.

## 6. Prayer can help individuals to forgive

Prayer makes a person able to forgive themselves and others because it makes them feel that God forgives all the mistakes of His servants. The process of forgiving, especially forgiving oneself, is very important for personal healing because it can make a person resolve feelings of guilt that play a role in the formation of depression.

#### 7. Prayer can eliminate despair

In prayer there is a prayer that is offered, every prayer is essentially a request or request, and every request and request of a servant will definitely be granted by Allah SWT if he remains istiqomah, then the souls of people who are despairing will be replaced by souls full of hope, confident that one day Allah SWT will definitely answer someone's prayer. Despair is part of mental illness and the greeting of Islamic law despair is to break the grace of Allah SWT. Therefore, prayer can eliminate despair and avoid mental illness (Zahrah et al., 2023)

#### 3. Health Benefits of Prayer Movements

##### 1) Takbiratul Ikhram Movement

Takbir is tantamount to an expression of intention. So in praying there must be a takbir movement. As a form of reminder of the intention in every movement prayer movement. When someone is doing takbiratul ihram (raising hands), then he is in a position to stand upright by raising both hands parallel to both shoulders or earlobes perfectly and then followed by reading takbir. The movement of takbiratul ihram can improve blood flow in the body and improve lymph circulation, and strengthen arm muscles<sup>8</sup>. When people do the takbiratul ihram movement, the position of the heart is right under the brain, so blood circulation can go smoothly to the brain and throughout the body. When the hands are raised upwards, parallel to the shoulders and ears will stretch the upper arm muscles. And then the hand is placed under the heart just above the stomach will reduce joint problems in the elbow and also in the shoulder.

##### 2) Ruku' Movement with Tuma'ninah

Ruku' is one of the most important movements of prayer and should not be left out. Ruku' is recommended to recite tasbih. It has been narrated from Ibn Mas'ud, the prophet once said: "If one of you ruku', he should say: subhana Rabbiya al-azhim three times, and that is the minimum recitation" reciting tasbih in ruku' movement, in one of the hadiths mentioned the explanation is to present the heart.

When praying with a calm heart, it will create tumanina or khusuhan. So that someone who does ruku' with tumanina, will get the lucky fruit for the reward of those who pray with khusyu'. Someone who performs the ruku' prayer movement calmly and optimally, will have many benefits in his health.

This can maintain the flexibility of the spine that contains the spinal cord and improve blood flow. In addition, this ruku' movement can also maintain the perfection and function of the spine. And can align the position of the heart with the brain so that blood flow can flow optimally to the center of the body. In addition, ruku' can also train the urine to prevent prostate disorders (Rofiqoh, 2020) .

### 3) I'tidal with Tuma'ninah

The i'tidal movement is getting up from bowing before prostrating. In i'tidal, the Prophet ordered to do it with tumakninah. He said, which means, "Then raise your head until you stand upright [so that each vertebra of your spine returns to its place]." In another narration, it is stated, "When you stand for i'tidal, then straighten your back and raise your head until your vertebrae are established in their places." (HR. Bukhari, Muslim, and Ahmad).

I 'tidal is a variation of posture after bowing and before prostration. The motion of standing bowed, standing prostrate, is a good digestive exercise. The digestive organs in the stomach are massaged and loosened alternately. In effect, digestion becomes smoother. When standing up from bowing by raising the hands, the blood from the head will go down, so that the part of the base of the brain that regulates balance is reduced in blood pressure. This keeps the nerves of the body in balance and is useful in preventing sudden fainting. In addition, i'tidal improves blood circulation and helps to take a deep breath followed by a strong exhalation in the opposite direction. The diaphragm (the body cavity partition between the chest and abdomen) returns in a higher position. The abdominal cavity is compressed to a lower place. The chest is higher than the air pressure, thus reducing the blood flow to the chest. The blood flow in both legs has a free opportunity to travel quickly to the abdominal cavity, where the veins that are soft receive blood flow from both legs (Jumini & Munawaroh, 2018) .

### 4) Prostration with Tuma'ninah

In the prostration movement is to put the head to the prayer mat that is held on the ground that we step on. We do from the beginning standing reading iftitah then prostrating lowering the body and before that the knees touch the ground, then both hands then the forehead.

What was conveyed by the wife of the prophet Muhammad, Aisyah R.A, once said "One night I lost the prophet, so I looked for him in the mosque. I saw him between prostration with both heels straight, saying: "I seek refuge with Your pleasure from Your wrath, I seek refuge with Your forgiveness tolerance from Your punishment, I seek refuge with You from You. I cannot count the praise of You as You praise Yourself."

The benefit of the prostration movement is that it can increase blood flow, and oxygen to the brain or head to the rest of the body. In addition, it resists blockages that occur in the blood vessels in the heart, and pumps

the lymph glands to the neck and armpits. Then for women prostration can develop and share the fitness of the female organs, then facilitate the birth canal and prevent conditions when the baby is upside down.

#### 5) Sitting between two prostrations

Sitting between two prostrations (sitting iftirasy), the form in carrying out this movement is to get up from prostration and then sit by placing the left leg under the hip and the legs of the hands folded towards the qiblah. Rasulullah once said: "Then get up so that you are upright in a sitting state" (HR. AlBukhari and Muslim). In the movement of prayer there must be a prayer that is said. In sitting between two prostrations also has a prayer that has been narrated by the prophet by Ibn Abbas: "O Allah, forgive me, love me, fulfill me, guide me, and grace me." The benefits of this movement are that it can balance the nerve processes in the body, relax the muscles in the legs, most importantly the upper legs and lower legs. Maintain the flexibility of the nerves of the thighs, calves. This nerve flexibility prevents prostate, diabetes, and difficulty urinating (Fajrussalam et al., 2022) .

#### 6) Initial Tashahhud

When one performs this movement, the thighs and calves meet each other and are folded. As well as holding all fingers and then leaving a sign by lifting the index finger. The benefit of this movement is that it can run the thyroid in sweat which counteracts joint pain and bone density.

In this sitting posture, also called iftirasy sitting, we sit with the groin, in which there is one large thigh nerve, on top of the heels of our feet. These heels are covered with a muscle that acts as a cushion. Thus, the heel presses on the muscles of the groin and the large groin nerve, so that the groin nerve is pinched. The massage or sequence can prevent or cure a groin nerve disease (neuralgia) that feels pain, pain until it cannot walk.

Similarly, the veins and arteries in the groin can be sorted and massaged, so that blood flow, especially blood flowing back to the heart, can be facilitated, which can prevent the onset of hemorrhoids.

Furthermore, it is said by Saboe (1996) the attitude of the toes of the right foot that stands on the floor when sitting tahiyyat, which strengthens the muscles of both soles of the feet, thus avoiding the onset of flat-treaded foot disease (pes-planus) where the entire sole of both feet is chopped to the ground, which can cause a feeling of aching, tired quickly on both feet. And for people with this pes-planus disease, sufferers cannot play sports, especially in the field of athletics (Hasanah & Syariah, 2023) .

#### 7) Final Tashahhud

Basically, the way to sit the final tashahhud is the same as when sitting the initial tashahhud. The difference is in the position of the soles of the feet. In the final tashahhud, the Prophet's sitting position was with

tawarruk, which is the position of the left buttock against the ground, the left foot and the right foot are on one side, namely the right side (HR. Abu Dawud and al- Baihaqi) and put his left foot under the thigh and calf of the right foot and straighten the sole of the right foot. But sometimes he spread it out (HR Muslim and Abu'Awânah).

The benefits of this movement are to improve the reproductive organs in the perineal region, Sitting tawarruk is very good for men because the heel presses on the flow of the bladder (urethra), male genital gland (prostate) and vas deferens channel. If done correctly, this posture can prevent impotence. The variation in the position of the soles of the feet in iftirasy and tawarruk causes all leg muscles to stretch and then relax again. It is this harmonious movement and pressure that maintains the flexibility and strength of our organs (Jumini & Munawaroh, 2018) .

#### 8) Greetings to the Right and to the Left

This movement is a movement by turning our head towards the right and also towards the left. Therefore, it will make the veins in the neck pull and become flexible. This movement nourishes and rests the muscles in the neck and head, and can circulate blood in the head. Then turning the head in this movement can ward off diseases of the nerves caused by stiff muscles in the neck bones, ward off headaches, and can tighten the skin on the face (Hasanah & Sharia, 2023) .

#### CONCLUSION

That prayer has tremendous benefits not only in spiritual aspects, but also physical and mental health. Prayer movements, such as bowing, prostrating, and sitting iftirasy, have a positive impact on the body by improving blood circulation, strengthening muscles, and preventing various diseases such as rheumatism and osteoporosis. In terms of mental health, prayer helps calm the soul, overcome stress, increase optimism, and foster a sense of peace. Closeness to Allah through prayer also provides a sense of confidence and hope in dealing with life's problems, and helps maintain emotional balance. Thus, prayer is not only an obligatory act of worship for Muslims, but also a holistic solution to improve human health and quality of life.

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## STRENGTHENING INDONESIA'S ECONOMY THROUGH HALAL INDUSTRY DOMINANCE

Sabrina ZAHROH

State Islamic University of Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0007-3046-1325>

### ABSTRACT

The Islamic economy, particularly the halal industry, has shown great potential as a new engine of economic growth in Indonesia. Based on data from the State of the Global Islamic Report 2023-2024, global halal product consumption is expected to reach USD 2.4 trillion by 2024, supported by the growth of the world's Muslim population. Although the contribution of Indonesia's halal industry is still low, positive growth trends are seen in the food, beverage, and modest fashion sectors. Indonesia is now ranked third in the Global Islamic Economy Indicator, behind Malaysia and Saudi Arabia. This research discusses the opportunities and challenges of halal industry dominance in Indonesia as well as strategic steps to optimize its contribution to the national economy.

**Keywords:** Islamic economy, Halal industry, Muslim

### INTRODUCTION

Sharia economy has become one of the important pillars in driving global economic growth, including in Indonesia. The halal industry, as an integral part of the Islamic economy, has great potential to grow. In the first quarter of 2024, the halal value chain sector recorded significant growth, with the food and beverage sector growing by 5.87 percent, and modest fashion by 3.81 percent. However, the contribution of Indonesia's halal industry is still relatively low compared to other countries such as Malaysia and Saudi Arabia. With the world's growing Muslim population, Indonesia has a great opportunity to increase the competitiveness of the halal industry to dominate the global market (Nugraheny & Djumena, 2024).

### METHOD

This research uses a descriptive approach with qualitative analysis based on secondary data. Data was obtained from global industry reports, such as the State of the Global Islamic Report 2023-2024, as well as Islamic economic indicators released by Dinar Standard. The analysis was conducted to identify opportunities, challenges, and strategies for the development of the halal industry in Indonesia. The main focus includes evaluating the performance of the food, beverage, and modest fashion sectors, as well as Indonesia's position in the global Islamic economic competition.

## RESULTS AND DISCUSSION

The halal industry in Indonesia is showing promising growth, although its contribution to the global economy is still below countries such as Malaysia and Saudi Arabia. Based on the State of the Global Islamic Report 2023-2024, global halal product consumption is projected to reach USD 2.4 trillion by 2024, reflecting a huge opportunity for Indonesia as the country with the world's largest Muslim population.

In the first quarter of 2024, Indonesia's halal food and beverage sector recorded a growth of 5.87%, while the modest fashion sector grew by 3.81%. This increase shows that the halal value chain sector has great potential to become the driving force of the national economy. Indonesia is currently ranked third in the Global Islamic Economy Indicator, showing significant progress in developing the halal industry.

However, Indonesia's contribution to the global halal market is still low compared to competing countries. To overcome this challenge, a comprehensive strategy is needed that includes innovation, increased competitiveness, and collaboration between the government, industry, and society.

### 1. Potential of Sharia Economy and Halal Industry in Indonesia

The Islamic economy has become one of the fastest growing sectors, especially in Muslim-majority countries. As a country with the largest Muslim population in the world, Indonesia has great potential to dominate the global halal market. According to Dinar Standard, one of the main factors driving the growth of the halal industry is the increasing awareness of global consumers towards halal products, including in non-Muslim markets. This opens up great opportunities for Indonesia to expand its market reach, not only in Asia, but also in Europe and America.

### 2. Challenges in Increasing the Contribution of the Halal Industry

Despite its huge potential, Indonesia faces a number of challenges in dominating the global halal market. Some of the key challenges include:

- Lack of Strong Halal Infrastructure and Ecosystem

Indonesia's halal industry infrastructure still lags behind Malaysia and Saudi Arabia, which have developed integrated halal ecosystems.

- Lack of Innovation and Technology

Many Indonesian halal industry players have yet to utilize modern technology to improve production efficiency and product competitiveness.

- Lack of Internationally Recognized Halal Certification

Indonesia's halal certification needs to be adjusted to global standards in order to be accepted in the international market.

### 3. Strategies to Improve Competitiveness

To improve the competitiveness of Indonesia's halal industry, several strategic steps need to be taken:

- Innovation and Technology

Industry players should utilize modern technologies, such as artificial intelligence (AI) and blockchain, to improve production efficiency and ensure transparency in the supply chain.

- Collaboration Between Stakeholders

The government, industry players, and the community must work together to build an integrated halal ecosystem. For example, the government can provide incentives for small and medium enterprises (SMEs) to enter the global halal market.

- Quality and Standard Improvement

Indonesian halal products must meet international standards to compete in the global market. This includes internationally recognized halal certification as well as product quality improvement.

### 4. Government's Role in Encouraging the Dominance of the Halal Industry

The government has an important role in facilitating the growth of the halal industry. Through supportive policies, such as tax incentives and low-cost financing for halal businesses, the government can encourage the growth of this sector. In addition, the promotion of Indonesian halal products in the international market through global exhibitions and forums can help increase the exposure and competitiveness of local products.

### 5. Modest Fashion Sector

Modest fashion is one of the most promising sectors in the halal industry. With a growth of 3.81% in the first quarter of 2024, this sector shows great potential to become Indonesia's export flagship. Several Indonesian Muslim fashion brands have successfully penetrated the global market, but the scale of this success still needs to be expanded. Design innovation, digital marketing, and collaboration with international designers are key to success in this sector.

### 6. Impact of Halal Industry on National Economy

The halal industry has a significant impact on the national economy, especially in creating jobs and increasing exports. With the growth of the global Muslim population, demand for halal products is expected to continue to rise, providing a great opportunity for Indonesia to expand its contribution to the global market.

In addition, strengthening the halal industry can help reduce dependence on non-halal sectors, such as oil and gas, thereby creating a more sustainable economy.

## CONCLUSION

Indonesia's halal industry shows great potential as the driving force of the national sharia economy. Although its contribution is still low, positive growth trends in various sectors indicate a promising direction. With increased competitiveness, innovation and strategic policies, Indonesia has the potential to become a global leader in the Islamic economy. Collaboration between the government, industry players, and the community is needed to optimize this opportunity and improve national economic welfare.

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## EFFECTIVENESS OF THE KARANG TARUNA PROGRAMME IN BUILDING SOCIAL AWARENESS

IN BANGKLE VILLAGE, BLORA REGENCY

Nanda Kartika Putri

UIN K.H. Abdurrahman Wahid Pekalongan

[nanputgsm12@gmail.com](mailto:nanputgsm12@gmail.com)

### ABSTRACT

This research aims to analyze the effectiveness of the program implemented by Karang Taruna in building community social awareness in Bangkle Village, Blora Regency. Karang Taruna as a youth organization has a strategic role in mobilizing community participation and increasing social solidarity through mobilizing community participation and increasing social solidarity through various community-based programs. Various community-based programs. The research method used is a descriptive qualitative with a case study approach. Data was collected through in-depth interviews, direct observation, and document analysis. The results showed that Karang Taruna's programs, such as gotong-royong activities, social assistance, and environmental education were significantly able to increase the sense of care and solidarity among the community. Factors that support the success of the program include the support of the village government, the enthusiasm of Karang Taruna members, and the community's involvement in the planning and implementation of activities. However, some obstacles such as limited funds and lack of training for Karang Taruna members are still challenges that need to be overcome. Challenges that need to be overcome.

**Keywords:** Youth Organisation, social awareness, Bangkle Village

## ANALYSIS OF SHARIA ECONOMIC LAW DISPUTE CASES

Muhammad Zaky MARDIKA

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0008-7618-4949>

### Abstract

This article discusses the case of Bank Syariah Indonesia (BSI) customer data leak which occurred in May 2023 due to a ransomware attack by the LockBit group. This data leak of 15 million customers reflects a serious violation regarding the protection of personal data, which is contrary to the principles of Sharia Economic Law, especially the rules of trust and responsibility in maintaining data confidentiality and security. This case also involves the Personal Data Protection Law (UU PDP) which, although not yet fully enforced at the time of the incident, remains an important legal reference in ensuring information security. The analysis is carried out through two main perspectives: legal positivism, which highlights violations of formal rules even though the PDP Law is not yet fully active, and sociological jurisprudence, which emphasizes the social impact in the form of people's anxiety about the security of their personal data. This article highlights the importance of effective legal implementation, transparency, and strengthening public trust in the sharia economic system to protect consumer rights, maintain the reputation of financial institutions, and prevent similar violations in the future.

**Keywords:** Sharia Economic Law, Data Leaks, Bank Syariah Indonesia, Personal Data Protection, Legal Positivism, Sociological Jurisprudence, Trust, Public Trust.



## INTEGRATION OF SCIENCE AND TECHNOLOGY AND RELIGIOUS VALUES: PILLARS OF FUTURE SUSTAINABILITY

**Hendri Hermawan ADINUGRAHA**

**State Islamic University of Pekalongan, Indonesia**

**ORCID ID: <https://orcid.org/0000-0002-8394-5776>**

**Sulistiya Puji ASTUTI**

**State Islamic University of Pekalongan, Indonesia**

**ORCID ID: <https://orcid.org/0009-0005-7186-0379>**

### **Abstract**

This research discusses integrating science and technology with religious values to create sustainability in human life. Through a holistic approach, this research shows that science, technology and religion can collaborate harmoniously without losing their identities. This integration is based on the principle of tawhid in Islam, which views the unity between science and religion. The study explores the implications of such integration in education, curriculum, teaching and learning process, and socio-religious life. The results show that this integrative approach not only enriches the understanding of science and religion but also supports the creation of a more humane, peaceful and sustainable society.

**Keywords:** integrating, science, and technology

### **INTRODUCTION**

Integrating science and technology (science and technology) with religion has become an increasingly relevant topic in the modern era. In the Islamic paradigm, the integration between religion, science and technology is based on the principle of tawhid, which emphasizes the unity and interrelationship between science and faith. The 7th International Conference on Islamic Studies 2024 at UIN Gusdur Pekalongan raised this theme to emphasise the importance of a harmonious, holistic, and comprehensive view of science, technology, and religion. Through this conference, academics and researchers from various countries shared their views on how science, technology and religion can work together for humanity, peace, and the sustainability of human life. (PUBLIC COMMUNICATION TEAM, 2024).

Integrating science and technology (science and technology) with religion is an effort to combine these two aspects to achieve the sustainability of human life. In the Islamic context, this integration is based on the

concept of tawhid, which emphasizes the oneness of God and recognizes that science and religion can complement each other. The 7th International Conference on Islamic Studies (ICIS) held by Postgraduate UIN Gusdur Pekalongan in 2024 carries this theme. It emphasises the importance of integrating science, technology, and religion in achieving peace and sustainability of life.

## **METHOD**

This research uses a qualitative method with a case study approach to an international conference organised by UIN Gusdur Pekalongan. Data were collected through direct observation, interviews with key informants, and analysis of related documents. Key informants comprised academics and researchers from various countries who participated in the conference. The data were analysed descriptively to identify the main themes from the discussions and presentations at the meeting and to examine the implications of integrating science, technology and religion in various aspects of life, especially in education and socio-religion.

## **RESULTS AND DISCUSSION**

### **RESULT**

The conference featured several resource persons from various offline and online countries. Key speakers included Dr Rizuwan bin Abu Karim from UiTM Cawangan Melaka, Prof. Dr Harapandi Dahri from Kolej Universiti Perguruan Ugama (Seri Begawan, Brunei Darussalam), Prof. Dr Yayan Sopyan SH MAg from UIN Syarif Hidayatullah Jakarta, and Prof. Dr Yayan Nur Bayan MPd from UPI Bandung. Prof. Dr Zaenal Mustakim MAg, Rector of UIN Gusdur Pekalongan, stated that science and religion do not have to be separate because many religious teachings encourage humans to think and understand the universe, which is science itself.

### **DISCUSSION**

#### 1. Education Curriculum Integration

In education, integrating science and technology and religion can be implemented through a curriculum combining scientific research with religious understanding. For example, learners are encouraged to conduct science research connected to religious realities. This helps students develop a holistic understanding of the world.

#### 2. Teaching and Learning Process

Teachers can develop teaching methods utilising creative imagination to explain scientific and religious concepts simultaneously. For example, natural phenomena described in the Qur'an can be linked to relevant scientific theories so that students can see the connection between science and their religious beliefs.

#### 3. Socio-religious Education

Integrative education also fosters mutual respect and appreciation of different religious beliefs. Thus, education does not only focus on the intellectual aspects but also on the social and spiritual aspects that are very important for creating a peaceful and harmonious society.

#### 4. Application in Daily Life

Integrating science, technology, and religion also has implications for daily life. For example, the use of technology in daily life should be aligned with religious values so as not to contradict moral and ethical principles. The technology developed should be used for the good of humanity, promote peace, and maintain the sustainability of life.

#### 5. The role of international conferences

Conferences like ICIS provide a platform for academics and researchers from different countries to share knowledge and experiences on integrating science technology, and religion. The discussions in these conferences help strengthen the understanding of the importance of collaboration between science and religion in achieving the goal of sustainability of human life.

### CONCLUSION

This research concludes that integrating science, technology, and religious values is a practical approach to creating sustainability in human life. This integration creates a more harmonious and humane society where science and technology support humanitarian and spiritual values. Education plays a crucial role in this process, with curricula combining science and religion and teaching and learning processes that develop creative imagination and mutual respect. In this way, integrating science and religion enriches the understanding of science and faith and supports the creation of a more peaceful and sustainable society. Integrating science, technology, and religion is an essential step towards the sustainability of human life. In the Islamic paradigm, the concept of tawhid supports the view that science and religion can complement each other and should be used harmoniously to achieve peace and sustainability. The 7th International Conference on Islamic Studies (ICIS) held by the UIN Gusdur Pekalongan Postgraduate Program showed that education is the best medium to achieve this integration. We can build a more harmonious and sustainable society by integrating science and religion into the educational curriculum, teaching and learning process, and social-religious education. In addition, applying these principles in daily life ensures that technology is used for the good of humanity and is in line with religious, moral, and ethical values.

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## CREATIVE ECONOMY AS A CATALYST FOR SUSTAINABLE TOURISM DESTINATION DEVELOPMENT

NAFAL FIKRI

### ABSTRACT

The creative economy has become an important pillar in driving the growth of the tourism sector in the era of globalization. By utilizing creativity, innovation, and technology, this sector is able to increase the competitiveness of tourist destinations and have a positive impact on the local economy. The background of this research is the need for diversification of tourism products that do not only focus on the exploitation of natural resources, but also create added value through cultural elements, arts, and creativity of local communities. In this context, the creative economy acts as a catalyst to integrate local potential with the needs of modern tourists. This research uses a qualitative method with a case study approach in several creative economy-based tourism destinations in Indonesia. Data were collected through in-depth interviews, field observations, and document analysis, which were then analyzed descriptively to illustrate the linkages between the creative economy and tourism development.

The purpose of this study is to identify the role of the creative economy in increasing the added value of the tourism sector, supporting destination sustainability, and empowering local communities. The results of the study are expected to provide strategic recommendations for the government, business actors, and local communities in optimizing the potential of the creative economy as an integral part of tourism development.

Keywords: creative economy, tourism, innovation, community empowerment.

## DESIGN AND IMPLEMENTATION OF A COMPUTERIZED RESTAURANT MANAGEMENT INFORMATION SYSTEM: A STUDY OF JEVENIKS RESTAURANT LTD., ABUJA FCT

**DR CHUKWUEMEKA GODSON EME (PhD)**

**Lecturer, Department of Business Administration, Faculty of Management,**

**National Open University of Nigeria (NOUN), Jabi-Abuja, Nigeria;**

**Tel: +234, (0), 49929862; E-Mail: [ceme@noun.edu.ng](mailto:ceme@noun.edu.ng);**

**[kaluchukwuemeka26@hahoo.co.uk](mailto:kaluchukwuemeka26@hahoo.co.uk)**

### ABSTRACT

The need for a computerized Restaurant Management Information System in the context of recent developments in the digital economy is as critical as the need for economic sustainability itself. The restaurant industry in Nigeria and many developing countries put in a lot of efforts in managing information and giving the right output to the ever-waiting Restaurant and Hotels clientele. The major aim of this research project is to examine the design and implementation of a Computerized Restaurant Management Information System, adopting a case study from the Jeveniks Restaurants Abuja FCT, Nigeria. Hence, the project work was primarily designed to give an insight to computer-based restaurant management information system. It is as a result of problems associated with the existing system which involves the use of manual methods in keeping information and other financial records in the industry. This study was anchored by three theories, viz – the Resource-Based View Theory (RBV), the Dynamic Capabilities Theory (DCT), and the Strategic Choice Theory (SCT). The study employed descriptive survey research design that allows for the use of questionnaire to elicit data from the respondents. The population of this study was 1,200 employees of Jeveniks Restaurants, Abuja, FCT, Nigeria), out of which 120 employees (that is, 10% of the total population) were selected for the study using the simple random sampling technique. Questionnaire was the primary instrument used to elicit information from the respondents. The research data was analyzed using both descriptive and inferential statistics: simple percentage derived from Frequency Distribution Tables, Mean scores and Standard Deviation (SD). Additionally, the research data was analyzed using the Statistical Package for Social Sciences (SPSS) Version 26. The hypotheses for this study were tested using inferential statistics (the independent t-test). The general finding shows that computerized restaurant information system improves the services offered by the restaurant industry; it is customer-friendly rendering effective, efficient and quick services to them, enhances accountability and effective and efficient record keeping, and enhances productivity of employees and overall profitability of the restaurant industry. Therefore, it was recommended that policies such as the digitalization of the economy



should be implemented as it will go a long way to create more sensitization on the use of electronic devices that could create and develop the country as a whole through an effective and efficient computerized restaurant management information system.

**Key Words: Design, Implementation, Computerized, Management Information Systems (MIS), Restaurant/Other Hospitality Industry, Abuja-FCT**

## 1.0 Introduction

Computerized restaurant management information system is database program that keeps record of all transactions carried out in the restaurant on daily basis. The system helps the restaurant management to keep adequate record of all transactions carried out and does those that will be carried out by the restaurant and maintain the database of the restaurant.

Business administration the world over has turned a new leaf, marching forward at the speed of light towards the digital economy due to the numerous advantages it brings. Jones (2003) maintained that what gives the administrator the power and control to manage the resources is the availability of information. According to Ogbonnaya (1994), it is the administrative responsibility of both managers and employees to enhance ideal administrative practices that ensures effective and efficient financial records in the restaurant and hotel industry. Computerized restaurant management information system database program that keeps record of all transactions carried out in the restaurant on a daily basis is a sine-qua-non for efficiency in the activities of the business. The system helps the restaurant management to keep adequate record of all transaction carried out and those that will still be carried out by the restaurant and maintain the database of the restaurant.

Various types of restaurants fall into several industry classifications based upon menu style, preparation methods and pricing. Additionally, how the food is served to the customer helps to determine the classification. Historically, restaurant referred only to places that provided tables where one sat down to eat the meal, typically served by a Waiter. Following the rise of Fast food and restaurants, a Retronym for the older ‘standard’ restaurant was created, sit-down restaurant then emerged. Most commonly, ‘‘sit-down restaurant’’ refers to a casual dining restaurant with Rable service, rather than on a ‘diner’, where one orders food at a Countertop. Sit-down restaurants are often further categorized, in North America, as ‘family-style’.

The term restaurant almost always means an eating establishment with table service, so the ‘‘sit-down’’ qualification is not usually necessary. Fast food and takeaway (take-out) outlets with counter service are not normally referred to as restaurants. Outside of North America, the terms fast casual dining restaurants, family style, and casual dining are not used and distinctions among different kinds of restaurants is often not the same.

In France, for example, some restaurants are called “bistros” to indicate a level of casualness or trendiness, though some “bistros” are quite formal in the kind of food they serve and clientele they attract. Others are called “brasseries”, a term which indicates hours of service. “Brasseries” may serve food round the clock, whereas “restaurants” usually only serve at set intervals during the day. In Sweden, restaurants of many kinds are called “restauranger”, but restaurants attached to bars or cafes are sometimes called “kok”, literally “kitchens”, and sometimes a bar-restaurant combination is called a “krog”. In English a “tavern”.

In *Dishing It Out: In Search of the Restaurant Experience*, Robert (2002) argues that all restaurants can be categorized according to a set of social parameters defined as polar opposites, high or low, cheap or dear, familiar or exotic, formal or informal, and so forth. Any restaurant will be relatively high or low in style and price, familiar or exotic in the cuisine it offers to different kinds of customers, and so on. Context is as important as the style and form; a taqueria is a more than familiar site in Guadalajara, Mexico, but it would be exotic in Albania. A Chris restaurant in North America may seem somewhat strange to a first-time visitor from India; but many Americans are familiar with it as a large restaurant chain, albeit one that features high prices and a formal atmosphere.

Computerized Management Information Systems (CMISs) can serve as a catalyst to restaurant management in Nigeria. This would go a long way to demystify the complexities of restaurant administrative systems in the country, facilitate data collection, quicken administrative decision-taking, harmonize the nature of issuing documents in restaurant businesses, ensure accountability, provide statistics for government policy and ensure effective communication within the organizational milieu. The development, design and implementation of a Restaurant Management Information System like the one proposed in this research project is therefore critical to Nigeria.

Ololube (2012) maintained that rising cost of running restaurant businesses leave some restaurants with low quality and inadequate human and material resources. Thus, the need for alternative ways of utilizing slim resources to attain set objectives makes restaurant record keeping imperative. Keeping records about restaurant manpower and material resources is critical for effective restaurant administration by managers. The administration of restaurants in Nigeria though a very complex venture that goes beyond the ordinary business of profit motive cannot be left behind. There’s the will to go digital like other countries have done with their tourism and hospitality sector of the economy. Like other developing countries, Nigeria lacks the resources necessary to digitalize the tourism and hospitality industry, one of which is Restaurant Management Information System.

## 1.1 Statement of Research Problem

Sales and services are the fundamental tools in any business organization; the profit and loss of any business depends on detailed information on sales and services made to aid decision making and implementation, if accountability is not checked, then the business is sure to collapse, as a result in any restaurant and hospitality business there is a need for a system that gives feedback to the management to aid decision making, this is where computerized management information system comes handy.

Besides, staffing in restaurant can be tricky because demand for food will likely fluctuate dramatically, often due to variables that you cannot track. It is important you identify any variables that can influence traffic in your restaurant such as weather and day of the week. Build a weekly schedule to staff your restaurant in accordance with these variables, such as scheduling additional staff on Saturday night if that is your busiest shift.

Compile data about sales and employee hours to determine a profitable ratio of employee hours to sales totals. Restaurant personnel training systems are also vital to success, ensuring that employees know company protocol and systems, and are capable of delivering a high quality product. Write a comprehensive employee manual detailing information that each member of your staff should know.

Besides, customers are not able to ask about quality of food or ask for any specialized diet foods. It is more difficult to ask for gluten-free or allergy-free foods with computerized ordering. Also, it is more possible for a customer to place an order, but never pick up the order which can lead to waste of food and possibly a loss of profits. Hence, it is in consideration of the advantages of a computerized as detailed above and more that the researcher embarked on this research to examine the design and implementation of a computerized restaurant management information system, adopting the Jeveniks Restaurants in Abuja, FCT, Nigeria.

## 1.2 Objectives of the Study

The main objectives of the study are the Design, Documentation and Implementation of a Computerized Restaurant Management Information System. The specific objectives of the study were to:

- i. determine how computerized management information system has facilitated increased productivity, decrease paperwork, and ability to analyze trouble spots;
- ii. evaluate how the system will increase the level of services quality and customer satisfaction;
- iii. highlight how the system will help the restaurants to have the ability to build competitive and strategic advantages;
- iv. identify how computerized management information system will improve the operating efficiencies and timely access to financial and operating data.

### 1.3 Research Questions

In line with the purpose of this study, the following research questions were formulated.

- i. What are the impacts of computerized management information system on increased productivity, decrease paperwork and ability to analyze trouble spots?
- ii. What are the impacts of the increase in the level of service quality on customer satisfaction?
- iii. How will the system help restaurants to have the ability to build competitive and strategic advantages?
- iv. How will computerized management information system improve the operational efficiencies and timely access to financial and operating data?

### 1.4 Research Hypotheses

In line with the purpose of this study, the following null hypotheses were formulated and will be tested at 0.05 alpha level of significance.

Ho1: There is no significant difference between the mean ratings and opinions of male and female respondents in Jeveniks Restaurants Abuja, FCT, Nigeria.

Ho2: There is no significant difference between the mean ratings and opinions of top-Management and other staff of Jeveniks Restaurants, Abuja, FCT, Nigeria.

### 1.5 Significance of the Study

This study is significant and useful to different stakeholders in the Nigerian economy. Firstly, this study would offer useful tips to Managers and operators of Restaurants in Nigeria. It would serve as an eye opener to the principles, practice and applications of Computerized Management Information Systems in improving their organizational productivity, profitability and overall business performance; it would also reduce costs invested in traditional paperwork activities, particularly in keeping paper documents in file cabinets and the susceptibility of losing vital documents on the long run, thereby enhancing efficiency and effectiveness in their business dealings.

Secondly, this study will serve as a policy document for the government in enacting effective policies that would guide the practice and activities of today's Computerized Management Information Systems which has taken center-stage in business operations across the globe. It would educate the government and their functionaries on the rudiments and applications of Computerized Management Information Systems in terms of the ethics of practice.

Again, this study would be very useful to academics and students of Management Sciences, as it would add to their body of knowledge, enrich and fill the research gaps in this area of study, serve as lecture notes for academics and spur them up to undertake further researches in this study area of knowledge. To the students, this study will enhance their understanding of Computerized Management Information Systems as it applies to Restaurants and other sectors of the Tourism and Hospitality industry, giving them the necessary skills needed to utilize the modern digital and computerized management information systems in Business Management practices generally.

In summary, this study is primarily aimed at increasing efficiency in operation, reducing time and running costs, monitoring and the recording of the activities and total administration in Jeveniks Restaurants Ltd Abuja, FCT, Nigeria by introducing a computerized Restaurant Management information system. Besides, this study is significant because its conclusions would be useful to:

1. Human Resources Managers in the hotel and restaurants business
2. The Federal, State and Local Government.
3. Scholars in the field of hotel and restaurant management
4. Management of Jeveniks Restaurants Ltd Abuja, FCT, Nigeria.

## **2.0 Literature Review**

This section reviews related literature in the subject area of study. It is sub-divided into four major sections. The first section incorporates the conceptual framework which reviewed the basic concepts as used in the study. The second section dealt with the theoretical framework, which discusses the theories that underpins or anchored the study. The third section is based on the review of related empirical studies with the present study while the fourth section summarized the literature reviewed identifying the gaps in literature.

## **2.1 Conceptual Framework**

This section discusses the basic concepts as used in this research projects. It examines the independent and dependent variables and constructs as used in the study.

### **2.1.1 An Overview of Different Types of Restaurants**

There are many different types of restaurant concepts to choose from, when planning a new restaurant. It can be hard to decide which concept will be right for you. Before you settle on one particular concept, first consider the following: who's your audience? What is your price range? Are you thinking formal or casual? Do you have a

particular type of food in mind you can build a brand around? Below are eight distinct types of restaurant concepts, from fast food chains to fine dining. Keep in mind that your restaurant design theme can blur the line between concepts to make it unique (Harrison, 2007).

One of the hottest trends at the moment is fast-casual, which is a slightly more upscale (and therefore more expensive) than fast food. Fast casual restaurants offer disposable dishes and flatware, but their food tends to be presented as more upscale, such as gourmet breads and organic ingredients. Open kitchens are popular with fast casual chains, where customers can see food being prepared. Panera Bread is a good example of fast casual.

There are many different restaurant-types out there. New restaurants open all the time, and concepts vary from pizza chains to fine sashimi restaurants to breakfast cafes and even restaurants that specialize in peanut butter and jelly sandwiches. Despite the broad range of restaurant concepts, most are classified by one of three major restaurant types, including full-service, fast-casual and quick service. This project details the challenges and opportunities operators face within each restaurant type.

#### **a. Full-Service Restaurants**

Full-service restaurants encapsulate the old-fashioned idea of going out to eat. These restaurants invite guests to be seated at tables, while servers take their full order and serve food and drinks. Full-service restaurants are typically either fine dining establishments or casual eateries, and in addition to kitchen staff, they almost always employ hosts or hostesses, servers, and bartenders. Two standard types of full-service operations include fine dining and casual dining restaurants. Fine dining restaurants usually gain perceived value with unique and beautiful décor, renowned chefs and special dishes.

#### **b. Fast-Casual Restaurants**

They are relatively modern technology for a restaurant that falls between full-service and quick-service. Also called quick-casual and limited service, these types of restaurants are typically distinguished by service type and food quality. Fast-casual restaurants are often perceived to offer better quality food and a more upscale dining area than quick-service restaurants, but with less expensive menu items than full-service restaurants.

#### **c. Quick-Service Restaurants**

Quick-service is the term for restaurants that capitalize on speed of service and convenience. Fast-food restaurants often fall under the umbrella of quick-service restaurants, but not all quick-service places serve fast-food.



### 2.1.2 The Broad Environment for Restaurants

Opportunities are discovered when organizations begin to analyze the broad environment. Hoteliers and restaurants need to be cognizant of these factors and how they can drive change in the industry. Societal trends and technological trends should be critical points of interest for industry executives. From a societal perspective, organizations need to look at influences such as current topics, emerging attitudes, demographic shifts and new fads (Oparanma, et al., 2009; Harrison, 2003).

An example of societal trends that are impacting the hospitality industry would include the explosion of social networking. The trend has spanned across several demographic barriers ranging from Baby Boomers to the Millennials. There has additionally been an enormous effect on the hotel and restaurant industry. Bloggers have launched sites commenting about experiences that they have had and have made recommendations regarding the hotel or restaurant. Savvy industry executives understand the impact of these societal trends and focus efforts on establishing methodologies that can incorporate appropriate strategies to take advantage of these trends (Luebke, 2010).

Technological advances focus on the innovation of products, procedures, or services and how these developments can affect the hospitality industry (Yang & Fu, 2007; Harrison, 2003). For example, online reservations have grown exponentially over the years (Jin-Zhao & Jing, 2009). The ability for industry executives to recognize the implications of this technological advance and develop strategies to take advantage of it is a critical component of strategy development. One of the premier online reservation portals, OpenTable.com, boosted that in 2006 dining seats filled in restaurants through the use of their online reservation system exceeded one million (Ross, 2006). This was a 65% increase from the previous year. Industry leaders, not acknowledging this technological advance and implementing it in some capacity would find their companies lagging in providing the appropriate customer service that their clientele would demand. Delay in the implementation of technological advances of this magnitude detracts from developing sustainability and competitive advantage (Jin-Zhao & Jing, 2009; Piccoli, 2008; Yang & Fu, 2007).

### 2.1.3 Technology's Impact in the Restaurant and Hotel Industry

Technology have impacted greatly on restaurant and hotel industry. A study conducted by Griffin (2018) investigated how information (through the data warehouses) was being utilized by restaurants/hotels, through the investigation of 12 of the largest hotel firms in the industry. In this study, only 7 of the 12 hotels were involved with data manipulation and 2 of the 7 had successfully developed and implanted their own data

warehouses. Even though some of the hotels did not have data houses in place they were planning on the future development of this technology.

Most of the hotels in the study were using information for support of strategic market analysis including targeting new customers, fine-tuning loyalty programs, sales analysis and conducting trend analysis. The study concluded that the hotels' ability to collect, process, and access large amounts of data can help companies build a competitive advantage (Griffin, 2018).

At the Balsams Grand Resort Hotel in New Hampshire, technology was used to help develop a guest history log. The Balsam Grand used the guest history logs to capture customized information on the guests that had already made reservations at the hotel. The program was one of the first attempts to use an expert system model to gauge the needs and wants of the guests. Information was generated in regards to hotel inquiries, rooms, room types and numbers, special requests, times of year visited, any special requests, service personnel requested, etc. (Siguaw & Enz, 2019).

At the Ritz Carlton in Chicago, customer demand of technical help with computers in the rooms was on the rise. With most guests making inquiries to the concierge office, both guests and employees were getting frustrated due to lack of technical knowledge. In response Ritz management created a new position, pulling from the hotel management information system department, called the concierge. With services being offered Monday through Friday, guests were able to obtain any technical support they need in conducting business requiring computers or computer technology. Customer service has improved overall, as well as the morale of the staff at the Ritz Carlton (Siguaw & Enz, 2019).

In addition to improving customer service and satisfaction several hotels were given 'Best Practices Awards' for information technology by implementing systems that helped in the increased efficiency of hotel operations. The Barbizon Hotel and Empire Hotel New York co-developed a computer database and hotel logbooks, phone calls for maintenance and record keeping of operations. Hotel personnel from any house phone or PC throughout the hotel can access the expert system. The expert system automatically assigns tasks to the responsible employee or manager, and can even page them to make them aware of the task. In 15 minutes, the system will re-page to remind, and if the task has not shown to be completed the system will automatically notify the appropriate manager. The system also facilitates management in \$750,000 in 3 years through increased productivity, decreased paperwork, and ability to analyze trouble spots.

Directly linked to the hotels improvement in operations they have shared a 30% increase in repeat business (Siguaw & Enz, 2019). It is evident through the preceding literature that leveraging this type of information can

lead organizations toward better decision making and building and sustaining competitive 76 Journal of Applied Business and Economics vol. 12(1) 2011 advantage (Yang & Fu, 2007; Lee, Barker & Kandampully, 2003).

#### **2.1.4 Managerial Implications in the Restaurant Industry**

The technology being developed and implemented by hotels and restaurants is ultimately going to increase the level of service quality and customer satisfaction industry wide. As was seen by the studies conducted in the hotel industry, a primary focus was the improvement of the level of service to the guests (Siguaw & Enz, 2019). The same scenario holds true for the restaurant industry. Service quality is a construct, which has received a great deal of attention and has been studied empirically in many industries including the restaurant industry (Garver, 2012; Bojanic & Rosen, 2014; Stevens, Knutson, & Patton, 2019).

Vandermerwe (2013) felt that those companies which would become successful would have had to look at the customer's entire experience from the pre to post purchase stage. Strategic use of technological factors gives industry executives the ability to gauge that experience and to predict purchasing habits of current customers, future customers, clusters of customers, and can break groups down demographically for better analysis (Garver, 2002).

As in the hotel industry, restaurateurs would have the ability to build competitive and strategic advantage by better understanding the needs and wants of the guests, hence building repeat business. Piccoili et al. (2001) believed that competitive advantage which is provided by technology can and will be invaluable in hospitality and other industries in the future. It is also felt that gaining competitive advantage by using technology, as a distinctive competency will require a total commitment from the entire organization.

Piccoli et al. (2001) continues by adding that proper evaluation of customers, competitors, internal and external factors combined with technology will uncover many opportunities which could be used to increase the service quality and customer satisfaction of hospitality and other industries' customers.

#### **2.1.5 Strategic Management Process for Restaurants**

The strategy formulation component is the driving force of the analysis. An in depth look at firms direction begins at this point. The focus at this stage is to assess the current vision, mission and objectives of the organization in addition to examining both the external and internal environments. From an external perspective, organizations need to look at two distinct environments: the broad environment and the task or firm environment (Harrison & John, 2018; Harrison, 2013).

The broad environment looks at factors, including societal trends, technological advances, political and legal trends, economic factors and other major industry innovations. The task or firm environment looks at factors such as customers, competition, government agencies, suppliers, and financial intermediaries. Finally, the internal environment focuses on factors within the organization such as management, financial and human (Berry, 2019).

### **2.1.6 Management Information Systems (MIS) in Restaurants**

Management information systems (MIS) provide critical information used to effectively operate a business. Many companies have entire departments devoted to managing, maintaining and configuring their management information systems. Management Information System (MIS) began in the late 1960s but really gained ground in the 1990s. Because a MIS represent a significant investment for most organizations, small businesses must perform thorough due diligence before deciding to implement a new system or overhaul existing systems (Miller, 2001).

Management information systems refer to the practice of integrating computer systems, hardware and software used to meet an organization's strategic goals. A MIS basically provides companies with four different types of information: descriptive, diagnostic, predictive and prescriptive (Miller, 2001).

A MIS has become very important in the areas of strategic support, data processing and managing by objectives. Because a MIS provides enormous amounts of information many companies think they make great investments. This holds true only if the information gained from the MIS generates a change in a company's harmful behavior.

#### **a. Descriptive Information**

Descriptive information provided by a MIS gives a company the "what is" state of the business. Descriptive or "what is" information provides the business with pertinent information that captures a specific moment during the company's operation. Examples of "what is" information include sales reports, financial reports, production reports, shipping, and receiving reports, and customer service reports (Miller, 2001).

#### **b. Diagnostic Information**

A MIS also provides companies with diagnostic information. Think of this type of information in terms of an automobile checkup. When a vehicle has a mechanical issue, often it gets a diagnostic checkup to determine the problem. A MIS provides the same type of diagnostic or "what is wrong" information. The diagnostic

information generated compares the “what is wrong” information to standardized correct information. Companies use diagnostic information coupled with other information types to make decisions regarding corrective actions. For example, a diagnostic report indicated how many units of product “X” shipped (descriptive information) but the key performance indicator report indicates that shipments have fallen below target levels (diagnostic information).

### **c. Predictive Information**

As indicated by its name, predictive information provides companies with “what if” scenario analysis. Predictive information generated by a MIS doesn’t always answer “what if” but it does provide companies with information to help determine future scenario based on current information. Examples of predictive information include: What will sales look like next quarter? Should we increase the forecast for this line? Will prices stabilize next year? (Miller, 2001).

### **d. Prescriptive Information**

Prescriptive information answers the question “what should be done”. After the predictive information provides a company with the “what if” scenario and the diagnostic information provides the “what is wrong”, the predictive information leads the company in the direction to make an informed decision. Although predictive information does not provide the answer on “what if” or “what is wrong” information, it does give the company the information required to make a decision based on the company’s goals and strategic objectives (Garver, 2019).

## **2.1.7 Management Information Systems and Restaurant Formation**

All of our company restaurants utilize computerized management information systems, which are designed to improve operating efficiencies, provide restaurant and Support Center management with timely access to financial and operating data and reduce administrative time and expense (Ansel, 2021).

With our current information systems, we have the ability to query, report and analyze this intelligent data on a daily, weekly, period, quarter and year-to-data basis and beyond, on a company-wide, regional or individual restaurant basis. Together, this enables us to closely monitor sales, food and beverage costs and labor and operating expenses at each of our restaurants. We have a number of systems and reports that provide comparative information that enables both restaurant and Support Center management to supervise the financial and operational performance of our restaurants and to recognize and understand trends in the business (Ansel, 2019).

Our accounting department uses a standard integrated system to prepare a monthly profit and loss statements, which provide a detailed analysis of sales and costs, and which are compared both to the restaurant prepared reports and to prior periods. We have satellite technology at the restaurant level, which serves as a high-speed, secure communication link between the restaurants and the Support Center as well as our credit and gifts card processor (Ansel, 2019).

### **2.1.8 Management Information System (MIS) and the Computer**

Translating the real concept of the MIS into reality is technically, an infeasible proposition unless computers are used. The MIS relies heavily on the hardware and software capacity of the computer and its ability, retrieve, communicate with no serious limitations. The variety of the hardware having distinct capabilities makes it possible to design the MIS for a specific situation. For example, if the organization needs a large database and very little processing, a computer system is available for such a requirement. Suppose the organization has multiple business location at long distances and if the need is to bring the data at one place, process and then send the information to various location, it is possible to have a computer system with a distributed data processing capability. If the distance is too long, then the computer system can be booked through a satellite communication system (Brandau, 2007).

The ability of the hardware to store data and process it at a very fast rate helps to deal with the data volumes, its storage and access effectively. The ability of the computer to sort and merge helps to organize the data in a particular manner and process it for complex lengthy computations. Since the computer is capable of digital, graphic, word image, voice and text processing, it is exploited to generate information and present it in the form which is easy to understand for the information user. The ability of a computer system to provide security of data brings a confidence in the management and storage of data on to a magnetic media in an impersonal mode (Brandau, 2007).

The computer system provides the facilities such as READ ONLY where you cannot delete to UPDATE. It provides an access to the selected information through a password and layered access facilities. The confidence nature of the data and information can be maintained in a computer system. With this ability, the MIS become a safe application in the organization. The software, an integral part of a computer system, further enhances the hardware capability. The software is available to handle the procedural and nonprocedural data processing. For example, if you want to use a formula to calculate a certain result, an efficient language is available to handle the situation. If you are not used to formulas but have to resort to every time to a new procedure, the nonprocedural languages are available. The software is available to transfer the data from one computer system



to another. Hence, you can compute the results at one place and transfer them to a computer located at another place for some other use. The computer system being able to configure to the specific needs helps to design a flexible MIS (Brandau, 2017). The advancement in computers and the communication technology has the distance, speed, volume and complex computing an easy task. Hence, designing a flexible and open system becomes possible, thereby saving a lot of drudgery of development and maintenance (Burkingham, 2017).

## 2.2 Theoretical Framework

Several theories abound to serve as platform for the explanation of the nature, processes, manifestations and variables of the Design and Implementation of A Computerized Restaurant Management Information System. However, the theories that anchor or underpin this study were the Resource-Based View (RBV) Theory, the Dynamic Capabilities Theory (DCT), and the Strategic Choice Theory (SCT). A brief discussion of these theories and their relevance to the study is instructive here.

### 2.2.1 The Resource-Based View (RBV) Theory

Barney's 1991 article is widely cited as a pivotal work in the emergence of Resource-based View (RBV), though other scholars (e.g. Birger Wernerfelt) had explained (less systematically) this theory before then. The fundamental principle of the RBV is that the basis for a competitive advantage of a firm lies primarily in the application of the bundle of valuable resources at the firm's disposal. RBV is a managerial framework used to determine the strategic resources a firm can exploit to achieve sustainable competitive advantage.

Resource-based View (RBV) conceptualizes the firm as a unique bundle of idiosyncratic resources and capabilities. To transform a short-run competitive advantage into a sustained competitive advantage requires that these resources are heterogenous in nature and not perfectly mobile. Two key assumptions of Resource-based View (RBV) that distinguishes it from others like the Industrial Organization View are that:

- Firms within an industry may be heterogenous with respect to strategic resources they control
- Resources may not be perfectly mobile across firms, and thus heterogeneity can be long-lasting

Effectively, this translates into valuable resources that are neither perfectly imitable nor substitutable without great effort. If these conditions hold, the firm's bundle of resources can assist the firm sustaining above average returns. Resources are all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness. Three categories of resources exist, which are physical capital resources, human capital

resources, and organizational capital resources. A resource must meet the following four criteria to be suitable and long-lasting under the RBV theory assumptions popularized by the acronym VRIN, viz:

- Valuable (V): A resource must meet the requirement of being valuable in terms of being in high demand, being relatively scarce in order to command high value.
- Rare (R): Such resource must be unique and incapable of being found everywhere.
- Inimitable (I): Such resource is not capable of being imitated, copied, or counterfeited, beyond imitation, matchless, unrivaled, exceptional, unique, etc.
- Non-substitutable: This suggests that the resource have no close substitute and cannot be replaced by another.

### 2.2.2 The Dynamic Capabilities Theory (DCT)

The idea about dynamic capabilities (DCs) was first developed by Teece (1994) in his seminal Paper on Dynamic Capabilities as an improvement, and to correct the shortcomings of the Resource-Based View theory. Teece, Pisano and Shuen (1997), opine that, dynamic capabilities refer to:

- Ability to achieve new forms of competitive advantage
- Ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments
- Ability to renew competences so as to achieve congruence with the changing business environments

Dynamic capability requires a strong base of established capabilities as well as the ability to efficiently deploy these resources and to continuously create bundles of new resources and knowledge. Dynamic capabilities theory (DCT) extends Resource-based View (RBV) and Knowledge-based View (KBV) by incorporating the process, deployment, and upgrading a firm's distinctive capabilities and competitive advantages in a constantly changing marketplace. It is often referred to as the "capability of capabilities".

Dynamic capability requires a strong base of established capabilities as well as the ability to efficiently deploy these resources and to continuously create bundles of new resources and knowledge. Learning ability centers at the core of dynamic capability. It is the capacity to generate and generalize (often through routines) ideas and to acquire new knowledge. Explorative learning seeks out variation, taking risks, experimentation, flexibility, discovery, and innovation. Exploitative learning focuses more on making and refining choices, increasing production efficiency, and execution of strategies.

Dynamic capability involves capability possession, capability deployment and capability upgrading. Combinative capability is key to dynamic capability. It is a firm's ability to integrate and synthesize internal resources and external learning and apply both to the competitive environment.

### 2.2.3 The Strategic Choice Theory

Mintzberg (1991) is associated with the Strategic Choice theory. Strategic choice theory is a theory in which forces and variables in the external environment are dynamic, and that business strategies are affected by the interactions between these factors. “Strategic choice” is defined as the process whereby power-holders within organizations decide upon courses of strategic action. This theory conceives of action being informed by the prior cognitive framing of actors of organizations in form of embedded routines and cultures. Actor’s prior value, experience and training will color his evaluation in some degree.

The ability of decision-makers (agents) to make a ‘choice’ between policies depends ultimately upon how far they could preserve autonomy within the environment, through achieving the levels of performance expected of them. The three key issues arising from the theory concern (1) the nature of agency and choice (2) the nature of environment and (3) the nature of the relationship between agents and the environment and between strategy and environment.

Changing external environment induce decision-makers to make adjustment in their competitive business strategies. In making these adjustments, the range of options considered are filtered and constrained so as to be consistent with the values, beliefs, and philosophies engrained in the mind of key decision-makers.

### 2.3 Related Empirical Studies

Several scholars had conducted empirical studies on the subject matter of the design and implementation of computerized restaurant management information systems. It is our interest in this section to critically highlight these previous studies, identifying their findings and conclusions and gaps in knowledge and how this present study attempted to fill the gaps identified.

A study conducted by Griffin (2018) in Nicaragua investigated how information (through data warehouses) was being utilized by restaurants/hotels, through the investigation of 12 of the largest hotel firms in the industry. In this study, only 7 of the 12 hotels were involved with data manipulation and 2 of the 7 had successfully developed and implemented their own data warehouses. Even though some of the hotels did not have data houses in place they were planning on the future development of this technology. The study employed survey research technique. A total population of 3200 employees out of which a sample size of 320 employees were selected using simple random sampling techniques. The study employed both descriptive and inferential statistics (i.e. simple percentages derived from frequency distribution tables, mean scores and standard deviation (SD) for the analysis of study data while the Chi-square statistics was utilized in interpretation of field data and testing of the hypotheses for the study.

A study conducted by Robinson (2016) examined 62 companies who had successfully developed and implemented data warehouses. The financial impact shown was reasonable return results, return on investment (ROI) equaling 40% and payback periods of approximately 2.31 years. One of the limitations discovered in Robinson study was the expense involved with the development of this type of technology. O'Sullivan (2016) has stated that the development of this type of data warehouse could cost an excess of 3 million dollars. The sheer cost of development of this type of technology will simply eliminate many smaller companies from participating in using this technology. A possible solution to the smaller firms could be purchasing information from a third- party vendor on a decision-by-decision basis (O'Sullivan, 2016; Robinson, 2016).

Magnini, et al, (2013) have identified six essential factors that can help build successful marketing strategies through the use of data mining, a statistical technique that builds models from vast data bases. They include (a) creating direct mail campaigns, (b) planning seasonal promotions, (c) planning the timing and placement of ad campaigns, (d) create personal advertisements, (e) define growing and emerging markets, (f) help in room reservations (wholesale and business customers) (Magnini et al., 2013).

Anjoh et al. (2021) conducted a study on: Design and Implementation of a Computerized Management Information System to Improve Secondary School Administration in Cameroon. The paper was aimed at designing and implementing a school management information system tailored to suit the needs of Cameroon's milieu. The methodology used in the programming is MERISE Method of database design and the program achieved is named DBetzSCUL M.I.S. The program is a network-based Window program that is both desktop and web-based. The network design is suggested to enhance the system sharing and division of labor. The result of this paper is to produce an electronic school management information system that is functional at micro and macro level.

Nwokocha (2017) conducted a study on the design and implementation of a computerized restaurant management information system: a case study of Jeveniks Restaurant Enugu Stat, an unpublished BSc Project submitted to Caritas University, Enugu State, Nigeria. The researcher employed the Computerized management information system database to elicit information restaurant personnel to collect data, process it and also store it for future use. Researcher used visual basic in designing the system and Microsoft office as the database system.

### 2.3.1 Gaps in Knowledge

The researcher having reviewed extensively the literature available in this subject matter identified some relevant gaps in literature. The researcher was not privileged to discover any empirical study that extensively

dealt on the Design and Implementation of Computerized Restaurant Management Information System using Jeveniks Restaurant Abuja, FCT, Nigeria. In fact, this study ranked as the first in this geographical locale (Abuja, Nigeria). Hence, this study filled the gap of geographical scope that was absent in previous studies. Secondly, while many previous studies adopted qualitative method of study, this present study was fully a quantitative and empirical study in its entirety; Thirdly, this study engaged a plethora and comprehensive literature reviews of virtually all previous works conducted in the subject matter; highlighting a strong and positive relationship between Computerized Restaurants and Management Information System (MIS) in Nigeria.

## 2.4 Summary of Reviewed Literature

The researcher reviewed the conceptual framework; highlighting and explaining the independent and dependent variables of the study. He identified and discussed the three theories underpinning the study. He discussed exhaustively the related previous empirical studies conducted by authors in this subject matter, identifying the gaps in literature which he attempted to fill in the present study

## 3.0 Methodology

The researcher in this section examined the issues concerning research design, population, sample and sampling technique that will be used for this work. The researcher also examined the instrument in collecting data, the validity of the instrument, reliability of the instrument, procedure for data collection, method of data analysis, and limitations of the study. The design for this study is a descriptive survey method. It is used to describe what is existing and to answer the research questions stated by the researcher for the study. The population of this study comprised of all the employees of Jeveniks Restaurant Ltd in Abuja, FCT., totaling 1,200. The population is made up of 800 males and 400 female traders.

Simple random technique was adopted for this study. In order to achieve a sample size that is representative of the total population, the researcher adopted a 10% of the total population totaling one hundred and twenty (120) employees of Jeveniks Restaurants Ltd in Abuja, FCT for the study. One research instrument was used for this study was questionnaire which was entitled: Design and Implementation of Computerized Restaurant Management Information System: A Study of Jeveniks Restaurants Ltd in Abuja, FCT, Nigeria was used to collect data for this study by the researcher. The reason for using questionnaire was based on the following advantages. Firstly, it can give objective and reliable information of it is carefully and well-constructed.

Secondly, it is relatively effective and easier to score and administer. Questionnaire is a good representation of group test and owing to the nature and diversity of the population, questionnaire methods become necessary.

The questionnaire is divided into two sections to enable the researcher obtain information from the respondents; the questionnaire will be designed in such a way that it provides the following sections (Section A; consisting of respondent personal information (data); while Section B consists of the structured questions to technically elicit information from the respondents on the subject matter. It was subdivided into strongly agreed (5), agreed (4), undecided (3), disagree (2) and strongly disagree (1) questionnaire. The Likert scale consists of a list of statement that has relationship with the issue in the question, it does not only allow the respondent to check those statements in which they agree or disagree but allows the respondent to state the degree of agreement or disagreement with every statement (Osuala, 2007).

Face and content validity is employed in this study, the researcher employed the help of some Senior members of the Faculty of Management Sciences (NOUN). After going through the work, they advised the researcher to see a statistician who will scrutinize the objectives of the study, research questions, research hypotheses as well as the methodology of the study. The draft questionnaire was also presented to the project supervisor for necessary corrections and adjustments before the final copy was printed out for use in the research work.

In order to establish the reliability of the instrument, pilot study was carried out. The essence of pilot study was to test the adequacy and suitability of the instrument in measuring what it is supposed to measure and to ascertain any difficulty that the researcher may encounter. For the purpose of this, a total of (12) copies of the questionnaire representing 10% of the total population of study were administered to the selected employees of Jevniks Restaurant Ltd in Abuja, FCT, Nigeria. They were filled under the supervision of the researcher. The filled questionnaires were collected and subjected to statistical analysis in order to determine the reliability coefficient of the instrument as well as the internal consistency of the items within the instrument.

The data collected from the pilot study was analyzed using Cronbach Alpha techniques and reliability index of 0.85 was obtained. Bennett (2006) testified that for a scale to be considered reliable, it should have an alpha value of 0.50 to 1. With the level of reliability index of 0.85, the instrument was considered reliable for use in the main study.

To administer the validated instrument of the study, an introductory letter was collected from the head of department and presented to some members of the Management team of the selected SMEs and other employees that were randomly selected. The research assistants were educated on how to distribute the questionnaires and who is qualified to be given the questionnaire.



The analysis of data for this study was done based on the hypotheses formulated. The researcher used descriptive statistical method for bio-data presentation. Measures of relationship between the variables were being carried out using independent t-test. The simple percentage, mean score and standard deviation was used to answer the research questions. All hypotheses were tested using the independent t-test at 0.05 alpha level of significance like what is obtainable in other social science. The reason for adopting these statistical tools is to test whether there will exist some significant differences or not and either to retain or reject the null hypotheses.

#### 4.0 Data Analysis, Interpretation and Discussion

This chapter presents the data collected, the analysis carried out and the discussion of the results obtained. The analysis is presented in sections. The first section presents the frequency and percentage distribution of bio data respondents and nominal questions as responded by respondents. The second section presents the answers to the research questions using descriptive parameters of mean scores and standard deviation. The third section presents the testing and interpretation of the two null hypotheses using parametric statistical techniques of independent t-test. All hypotheses were tested at 0.05 alpha level of significance. The major findings are then revealed before the discussions of the major findings.

#### 4.1 Data Analysis and Interpretation

##### 4.1.1 Analysis of Demographic Information

Descriptive statistics was used to analyze the demographic information of the respondents, these included the use of frequency and percentage.

**Table 4.1.1: Bio-Data of Respondents**

S/No.	Bio-data	Category	Frequency	Percentage (%)
1.	Status	Top-Management	10	9.3
		Managers	30	25.0
		Other employees	80	65.7
2.	Gender	Male	70	58.3
		Female	50	41.7
5.	Qualifications	M.Sc./M.Ed/MA/MBA	25	30
		B.Sc/B.Ed	20	24
		NCE/OND	50	60
4.	Years of experience	0- 5 years	60	72
		6 - 10years	20	24
		11 - 15 years	20	24

On the status of the respondents, 10 representing (9.3%) were top-Management executive, 30 representing (25.0%) were Managers, while 80 representing (65.7%) were other employees of the organization. Table 4.1.1 above showed that 70 representing (58.3%) were males and 50 representing (41.7%) were females. According to Table 4.1.1, 25 representing (30%) had M.Sc/M.Ed/MA/MBA degree, 20 representing (24%) possess B.Sc/B.Ed degree while 50 representing 60% had NCE/OND. On the respondents' working experience, from the table above showed that 60 persons representing (72%) had worked between 0 – 5 years, 20 persons representing (24%) had worked between 6-10 years, while 20 persons representing (24%) had worked between 11 – 15 years respectively.

#### 4.1.2 Answering of Research Questions

This section presents the result of this study based on the data analysis. They were presented on the basis of the five research questions and two null hypotheses that guided the study. The researcher used 3.00 as the mean otherwise known as decision mean since the instrument was structured along a modified five Likert scale structure to take decision on whether to accept or reject the research questions after comparing it with the qualitative mean. Therefore, a mean score of 3.00 and above indicate positive response to the research question and accepted while a mean score below 3.00 indicate negative answer to the research question and rejected.

This is shown below:

SA	-	5 points
A	-	4 points
UD	-	3 points
SD	-	2 points
D	-	1 point

$$\frac{5 + 4 + 3 + 2 + 1}{5} = \frac{15}{5} = 3.00 \text{ (Decision Mean)}$$

#### Research Question One:

What are the impacts of computerized management information system on increased productivity, decrease paper work and ability to analyze trouble spots?

The data for providing answers to the above research question is presented on Table 4.1.2 below:

**Table 4.1.2: Mean and Standard Deviation Ratings of the impacts of computerized management information system on increased productivity, decrease paper work and ability to analyze trouble spots**

S/No.	Questionnaire Items	Mean	SD	Decision
5.	Computerized management information system enhances efficiency in the employee work processes	4.22	1.05	Agreed
6.	Employees' stress pattern are reduced, organizational productivity high, paper work reduced, and ability to analyze trouble spots enhanced	3.99	0.97	Agreed
<b>Cluster</b>		3.85	1.03	Agreed

The respondents in Table 4.1.2 agreed that there is a strong positive relationship between computerized management information system and increased productivity, reduction in paper work and ability to analyze trouble spots in Jeveniks Restaurant Ltd., Abuja, FCT, Nigeria. The variation of opinions of respondents symbolized by the mean ratings ranges between 3.99 and 4.22 while the standard deviation (SD) ranges between 0.97 and 1.05 respectively.

**Research Question Two:**

What are the impacts of the increase in the level of service quality on customer satisfaction?

The data for providing answers to the above research question is provided in Table 4.1.3 below:

**Table 4.1.3: Mean and Standard Deviation Ratings of the impacts of the increase in the level of service quality on customer satisfaction**

S/No.	Questionnaire Items	Mean	SD	Decision
7.	Improvement in total quality management (TQM) in Jeveniks Restaurant Ltd has improved customer trust in our products	4.31	1.08	Agreed
8.	Sales revenue has seriously increased as a result of high customer patronage of our products	4.20	1.10	Agreed
<b>Cluster</b>		4.20	1.09	Agreed

The respondents in Table 4.1.3 agreed that that the increase in the level of service quality has positively impacted on customer satisfaction by improve customer trust in our products and enhancing sales revenue of our company. This acceptance was symbolized by the above mean score ratings ranging between 4.20 and 4.31 and the standard deviation ranging between 1.08 and 1.10 respectively.

**Research Question Three:**

How will the system help restaurants in their ability to build competitive and strategic advantage?

**Table 4.1.4: Mean Ratings and Standard Deviation on how computerized management information system help restaurants in their ability to build competitive and strategic advantage**

S/No.	Questionnaire Items	Mean	SD	Decision
9.	Computerized management information system reduces unnecessary paper work in the daily activities of restaurants and enables them build competitive and strategic advantages	4.01	0.92	Agreed
10.	Employees work lesser hours and earn higher pay as productivity is enhanced	3.99	0.95	Agreed
Cluster		3.99	0.91	Agreed

The respondents in Table 4.1.4 accepted that computerized management information system helps restaurants to build competitive and strategic advantage. This was symbolized by the mean ratings ranging between 3.99 and 4.01 while the standard deviation (SD) ranges between 0.92 and 0.95 respectively.

**Research Question Four:**

How will computerized management information system improve the operational efficiencies and timely access to financial and operating data?

**Table 4.1.5: Mean and Standard Deviation Ratings of how computerized management information system improve operational efficiencies and timely access to financial and operating data**

S/No.	Questionnaire Items	Mean	SD	Decision
11.	Computerized management information system enhances operational efficiencies through efficient production processes, efficient production line management, wastage reduction, greater workforce engagement, etc.	4.24	1.05	Agreed
12	Computerized management information system guarantees timely access to financial and operating data, as information flow is at its peak in all facets of the organizational activities	3.92	1.07	Agreed
Cluster		3.92	1.04	Agreed

Respondents in Table 4.1.5 accepted that computerized management information system improve operational efficiencies and timely access to financial and operating data. This was symbolized by the mean ratings ranging between 3.92 and 4.24 while the standard deviation (SD) ranges between 1.05 and 1.07 respectively.

#### 4.2 Test of Hypotheses

The following hypotheses will be tested at 0.05 alpha level of significance.

**Table 4.2: t-test of Hypotheses on Ho1 and Ho3**

S/No	Hypotheses	Cate gory of Resp	N	- N	SD	T- CD	DF	T. T A B	Decisio n
1.	There is no significant difference between the mean ratings and opinion of male and female respondents in Jeveniks Restaurants Ltd., Abuja, FCT, Nigeria	Males  Females	120	4.01	1.15	- 1.6 2	541	1.9 6	Accepte -d
2.	There is no significant difference between the mean ratings and opinions of the top-Management executive and other employees of Jeveniks Restaurants Ltd., Abuja, FCT, Nigeria	Top- Mgt.  Exec utives  Other empl oyees	120	3.89	1.01	- 1.6 2	541	1.9 6	Accepte -d

**Significant level = 0.05**

##### 4.2.1 Hypothesis One (Ho1):

Hypothesis (Ho1) states that there is no significant difference between the mean ratings and opinion of male and female respondents in Jeveniks Restaurant Ltd., in Abuja, FCT, with regards to the design and implementation of computerized management information system in Jeveniks Restaurant in Abuja, FCT,

Nigeria. The hypothesis was tested at 0.05 alpha level of significance. From the table 4.2 above, the calculated t-values, (-1.62) is less than the t-calculated (1.96). Hypothesis (Ho1) is therefore accepted.

#### 4.2.2 Hypothesis Two (Ho2):

Hypothesis (Ho2) states that there is no significant difference between the mean ratings and opinions of the top-Management executive and other employees in Jeveniks Restaurants Ltd., in Abuja FCT Nigeria with regard to the design and implementation of computerized management information system in Jeveniks Restaurant Ltd., Abuja, FCT, Nigeria. This was tested at 0.05 alpha level of significance. From table 4.2 above, the calculated t-value (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho2) is therefore accepted. Respondents therefore accepted in all clusters, there is no significant difference between the opinions of male and female respondents and the top-Management executive and other employees of Jevemiks Restaurant Ltd., in Abuja, FCT, Nigeria.

#### 4.3 Summary of Major Findings

The findings from this present research are consistent with the hypotheses. The outcome of the independent t-test analysis revealed that there is a strong positive relationship between computerized management information system and restaurant efficiency and effectiveness in terms of design and implementation. Hence, the major findings are hereby summarized below:

- i. That a computerized management information system offers a wide selection of features to improve control of restaurant business and save time spent on inventory, purchasing and accounting;
- ii. That a computerized management information system can drastically cut down on shrinkage, the inventory that disappears from the store or restaurant due to theft, wastage and employee misuse;
- iii. That, since employees knows that inventory is being carefully tracked, internal shrinkage will dwindle;
- iv. That the right of the automated management information system would offer to restaurants a new level of control over their operations, increase efficiency, boosting profits, and helping them fine-tune their business model.

#### 4.4 Discussion of Results

The body of literature presented by O'Sullivan, 2016; Robinson, 2016; Jin-Zhao & Jing, 2019; Griffin, 2018; Magnini, et al., 2013; Siguaw and Enz, 2019 from which the research hypotheses were formulated agreed with this present study and provided great support that the design and implementation of a computerized management information system has strong and positive relationship with the efficiency and effectiveness of restaurants' businesses in terms of improving sales revenue and profits, reduce production time, cut down on



production resource wastages, reduces employees' stress level, and increases customer satisfaction through product total quality assurance. Hotel and restaurant executives understand the importance and power of information, especially in turbulent financial times such as in the present global economy. The development and use of management information systems can additionally aid in hotels' ability to develop concepts for new development, target better locations, identify potential franchises, locate new labor markets, track employee performance, and most importantly, track customer satisfaction (Jin-Zhao & Jing, 2019; Griffin, 2019).

It is evident from the study findings that leveraging this type of computerized management information system can lead organizations toward better decision-making and building and sustaining competitive and strategic advantage (Journal of Applied Business and Economics, vol. 12(1), 2011; Yang & Fu, 2017; Lee, Barker & Kandampully, 2013)

### **5.0 Study Implications, Conclusion and Recommendations**

This research study is on the design and implementation of computerized restaurant management information system: a study of Jeveniks Restaurants Ltd., Abuja, FCT, Nigeria. The main objective of this study is to investigate the impact of the design and implementation of computerized management information system on restaurant's business activities in Jeveniks Restaurants Ltd. in Abuja, FCT, Nigeria. The study also seeks to examine the benefits of utilizing a computerized management information systems in restaurant business transactions in Nigeria.

### **5.1 Implications of the Research Findings**

Based on the results of analysis for the study, it was revealed that this study were detailed as the study has relevant implications for operation of restaurant business in Nigeria. Hence, the implication of this study are as follows:

- i. It is very clear that a new automated management information system is inevitable for effective and proper management information system of the restaurant;
- ii. The computerized management information system will help to solve all the problems inherent in the traditional manual business operations with its attendant unnecessary paper work;
- iii. That Managers of restaurants will find the computerized management information system more efficient and effective in handling employee matters, customer and clientele management and overall organizational performance;

- iv. That the design and implementation of an efficient computerized management information systems is employee-friendly as it will reduce man-hours spent in production and invariably improved productivity and higher pay for the workers.

## 5.2 Conclusion

At any point of the day, a computerized management information system can instantly tell you how many of a particular product has been sold today (or last week, or last month) how much money you have in your cash drawer, and how much of that money is profit, Detailed sales reports make it much easier for you to keep the right stock on hand. The restaurants can track their remaining inventory, spot sales trends, and use historical data to better forecast their needs. Often, this software can alert the Manager to re-order when stocks run low. Many store owners think they know exactly what trends affect them find a couple of surprises once they have this data.

Few purchases can have as dramatic an effect on the restaurant retail or hospitality business as an automated management information system. The right of the automated management information system will give the restaurants a new level of control over their operations, increasing efficiency, boosting profits, and helping them fine-tune their business model.

## 5.3 Recommendations Based on Research Findings

Based on the research findings of this study, the following recommendations were proffered:

- i. Staff should have basic knowledge of computer operations in terms of computer hardware and software applications;
- ii. That the original Basic CD, organizational databases should be stalled for effective and efficient Management Information Systems operations in restaurants;
- iii. That Managers of restaurants in Nigeria should design and implement 21<sup>st</sup> Century computerized computer gadgets in order to effectively and efficiently enhance their corporate performance;
- iv. That employees of restaurant businesses in Nigeria should be trained on-the-job to enable them effectively handle the computerized equipment in order to achieve organizational goals.

This study focused on the evaluating the design and implementation of a computerized restaurant management information system adopting a case study of Jeveniks Restaurants Limited in Abuja, FCT, Nigeria. It is necessary that further research be conducted in this area of study; possibly on the impact of a computerized management information system in the public sectors of the Nigerian economy.

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## AN ANALYSIS OF THE IMPACT OF DIGITAL MARKETING ON PRODUCTIVITY OF SELECTED SMEs IN ABUJA, NIGERIA

**DR CUKWUEMEKA GODSON EME**

**Lecturer, Department of Business Administration, Faculty of Management**

**Sciences, National Open University of Nigeria (NOUN), Jabi-Abuja,**

**Nigeria; Tel: +234, (0), 49929862; E-mail: ceme@noun.edu.ng**

### ABSTRACT

Marketing has been a major challenge to Small and Medium Enterprises (SMEs) around the world due to high cost. The classical marketing communication system such as television, radio, etc. seems to have a high cost for which it does not even reach the targeted customers and hence, not producing the expected result. The main objective of this study is centered on the analysis of the impact of digital marketing on productivity of selected SMEs in Abuja, Nigeria. To achieve this, several channels of digital marketing were used such as email marketing, social media, online advertisement, etc. while the concept of growth was evaluated in terms of sales and market share. This study was anchored by three theories, viz – the Generational theory, the Social Network theory and the Collective Intelligence theory. The study employed descriptive survey research design that allows for the use of questionnaire to elicit data from the respondents. The population of this study was 1,200 employees of the selected SMEs, out of which 120 employees (that is, 10% of the total population) were selected for the study using the simple random sampling technique. Questionnaire was the primary instrument used to elicit information from the respondents. The research data was analyzed using both descriptive and inferential statistics; simple percentage, mean score and standard deviation. Additionally, the research data was analyzed using the Statistical Package for Social Sciences (SPSS) Version 26. The hypotheses were tested using inferential statistics (the independent t-test). The general finding shows that digital marketing channels such as social marketing, online marketing, greatly contribute to the growth of SMEs in Abuja, and Nigeria in general. Therefore, it was recommended that policies such as the digitalization of the economy should be implemented as it will go a long way to create more sensitization on the use of electronic devices that could create and develop the country as a whole through marketing communication.

**Key Words: Traditional Marketing, Digital Marketing, Productivity, Organizational Performance, Technology, Internet**

## 1.0 INTRODUCTION

Marketing is based on the concept of value creation (Carmi and Yassin, 2013). The goal of marketing is to identify, create, deliver and promote valuable products or services that meet the needs and want of customers, in exchange for fair compensation. It aims to create mutually beneficial exchange between the customer and the business based on a strategic communication process by offering value, such as quality, convenience, and customer experience, in order to attract and retain customers. According to the American Marketing Association, marketing is the activity collection of organizations, and methods for producing, communicating, delivering, and exchanging offers that have value for customers, clients, partners, and the society (AMA, 2022). The value creation process focuses on the customer and what they consider to be valuable (Carmi and Yassin, 2013). This includes a wide range of factors; managing product price, place and promotion strategically as well as product quality, affordability, convenience, personalized experiences, and strong relationships with the brand.

By understanding what is valuable to customers and delivering on these values, businesses can build trust and establish a loyal customer base. A strong value-proposition is a key differentiator as it sets a business apart from its competitors by highlighting what makes it unique and valuable to customers. This includes providing ongoing support, listening to customer feedback; following market trends, and continuously improving products or services to meet changing customer demands (Baker and Solomon, 2020).

In the contemporary business landscape, Small and Medium-sized Enterprises (SMEs) constitute the backbone of economies worldwide, contributing significantly to job creation, innovation and economic growth (Kuckertz, 2013). So, they (SMEs) are an essential contributor to the economic growth and development of many countries worldwide, including Nigeria. However, the journey to sustained success for SMEs is fraught with challenges, including limited resources and intense competition. To overcome these hurdles and achieve enduring prosperity, SMEs are increasingly turning to digital marketing as a powerful lever for enhancing their performance (Binbasioglu & Turk, 2020). In this context, digital marketing has emerged as a critical tool for businesses to reach and engage their target audiences, enhance customer engagement, and gather valuable data for targeted advertising. By embracing new technologies, companies can increase brand awareness, drive sales, and improve customer experience (Jung & Shega, 2023).

Using non-digital media channels like radio, television, newspapers, and flyers as marketing tools is referred to as 'traditional' marketing. In order to offer a market to a digital customer base, marketing operations are referred to as 'digital marketing' when they are carried out through various internet platforms and technologies (Barchue and Aikaeli, 2016). Bala and Verma (2018) defined 'digital marketing' as the process of recruiting



new clients and increasing brand awareness using electronic channels of communication. Kotler and Armstrong (2009) defined digital marketing as a sort of direct marketing that enables two-way electronic connection between consumers and merchants using digital channels such as the World Wide Web, electronic mail, online discussion groups, interactive television, and mobile telephones.

Digital marketing encompasses a multifaceted array of online strategies and tools designed to connect businesses with their target audiences in the digital realm. It encompasses various channels such as social media, search engines, email, content marketing, and paid advertising, allowing SMEs to craft tailored approaches that resonate with their specific channels (Chaffey & Ellis, 2019). In an era where consumers are progressively upgrading to the digital sphere for information, shopping, and social interaction, harnessing the potential of digital marketing is not merely an option, it is an imperative for SMEs seeking sustainable growth and competitiveness.

Digital marketing is the use of internet, social media, search engines, mobile devices, display advertising and other channels to reach consumers, so the maxim, if an enterprise cannot be found in social media, then it does not exist, seems to depict consumer behavior nowadays. It should be clear that the utilization of digital channels is imperative for brands, and it should be advanced into Small and Medium Enterprises (SMEs) if they want to stay viable and grow. However, it seems that many SMEs do not use the full potential of these new digital tools (Gilmore, 2007, 137-145). SMEs are a substantial part of the world economy. For example, in Europe, 99% of enterprises are SMEs (of which 92% are micro-enterprises) and those companies provide more than 75% of private sector jobs (European Commission, 2012) In the U.S. economy, SMEs represents 99.7% of the employer firms and employ half of U.S. workers (Small Business Administration, 2014). The importance of these companies cannot be unheeded.

A business needs to be able to generate more revenue than it spends every year in order to be profitable. Business profitability or return on investment (ROI) are metrics for determining how effectively a business generates revenue and manages expenses (Kaplan and Haenlein, 2010). A business must be profitable in order to last over the long haul which means that its revenue must exceed its costs (Narver and Slate, 1990). A company's bottom line can be impacted by a wide range of factors including the effectiveness of its operations, the caliber of its goods and services, and the result of its sales and marketing campaigns. Gross profit is the amount of revenue that is left after total revenue is reduced by the cost of goods sold. A declining gross profit margin might be a sign that a company 's inventory control procedures need to be adjusted or that the cost of a company's products is not increasing at a rate that keeps up with inflation. If a manufacturer's production costs

are rising more quickly than their selling prices, a decline in sales may be an indication that one or both of these factors needs to be changed (Narver and Slater, 1990).

Profitability is the most significant purpose of a business from an accounting perspective and by the adoption of digital marketing strategies into daily operations businesses may minimize marketing costs, increase customer base and thereby increase their revenue (Kaplan and Haenlein, 2010). Digital marketing may be more cost-effective than conventional marketing techniques. For instance, a social media campaign can be significantly less expensive than a television or print advertising campaign. According to Tajvidi and Karami (2017), digital marketing enables companies to target specific groups of individuals via advertising. This can increase the performance and profitability of businesses because the advertisements are more likely to be seen by more individuals who are interested in the advertised product or service. Digital marketing campaigns are easily measurable and tractable, allowing businesses to determine what is and is not effective. This can assist companies in optimizing their marketing efforts and maximizing their return on investment. Digital marketing can assist businesses in fostering customer relationships and increasing customer engagement. This can result in increased customer retention and loyalty. Traditional marketing methods reach just a small audience but digital marketing can assist companies in expanding their customer base and increasing their overall profits.

According to Sam and Dhanya (2012), digital marketing is associated with profitability and performance for a variety of reasons. First, digital marketing is an integral component of the overall marketing strategy for the vast majority of businesses in recent times, and it is crucial to understand how effectively it generates revenue and profits. Secondly, digital marketing can be a less-costly endeavor for businesses, therefore, it is most certain to ensure a positive return on investment for the resources invested. Lastly, measuring the profitability and performance of digital marketing can help businesses identify areas where digital marketing efforts can be enhanced to produce better results. The use of digital marketing create an avenue for businesses to measure their overall success on global level, and by doing marketing research and engaging into different digital marketing activities which creates a leverage or opportunity wherein customers from a global customer-base and competitors can give businesses or specifically local business such as SMEs in developing countries a broader idea on which products or services are more profitable based on market trends and how to produce their products and services to meet global standards. The use of digital marketing platforms such as social media, email marketing, online platforms, search engine optimization helps businesses to engage with customers from all around the world and use the success of other businesses around the world as a means to improve on their marketing strategies and operations thereby subsequently leading to an increase in improvement in their overall performance and profitability (Sam and Dhanya, 2012; Albari and Kartikasari, 2019).

## 1.1 STATEMENT OF THE PROBLEM

The importance of SMEs in both developed and under-developed countries cannot be overemphasized, as it provides the highest employment in the economy. The sustainability of these SMEs can only be actualized when they make sales, realized profit, gain new market share and be able to cover the invested capital. The commercialization aspect of SMEs is generally different from that of large enterprises, hence, making the adoption of digital marketing to be a big challenge to them (Lipiainen, & Karjaluo, 2015, 735-741). The adoption of digital marketing channels is likely to be more successful in big enterprises than the small enterprises since they are more likely to have the requisite resources and technology compared to SMEs (Barnes, Slingo & Woolings, 2012, 2467-2481).

Several studies have been conducted in different countries such as that of Onyango, (2016, 101-105) who make an analysis on the impact of digital marketing strategies on the performance of flowers-exporting firms in Kenya who analyzes the impact of digital marketing on customers services at Barclays Bank pf Kenya by using a content analysis, different from the former. Thus, due to many contradictory ideas of many authors on the impact of digital marketing on the growth of SMEs, this study sought to outline the impact of digital marketing on productivity adopting the case study of selected SMEs in Abuja, HCT, Nigeria.

## 1.2 OBJECTIVES OF THE STUDY

The main objective of the study is to examine the impacts of Digital Marketing on Productivity of Selected SMEs in Abuja, FCT, Nigeria as a case study. The specific objectives of the study were to:

- i. determine the impact of digital marketing on business performance and productivity of SMEs in Nigeria;
- ii. evaluate the traditional marketing channels and its drawbacks on the performance of SMEs in Nigeria
- iii. highlight the impacts of the various digital marketing channels on SMEs productivity in Nigeria;
- iv. identify the challenges facing effective adoption of digital marketing technologies in enhancing SMEs productivity in Nigeria

## 1.4 RESEARCH QUESTIONS

In line with the purpose of this study, the following research questions were formulated.

- i. What is the impact of digital marketing on business performance and productivity of SMEs in Nigeria?
- ii. What are the traditional marketing channels and its drawbacks on the performance of SMEs in Nigeria?

- iii. What are the impacts of the various digital marketing channels on SMEs productivity in Nigeria?
- iv. What are the challenges facing effective adoption of digital marketing technologies in enhancing SMEs productivity in Nigeria?

## 1.6 RESEARCH HYPOTHESES

In line with the purpose of this study, the following null hypotheses were formulated and will be tested at 0.05 alpha level of significance.

Ho1: There is no significant difference between the opinions of male and female respondents in the selected SMEs in Abuja, FCT, Nigeria.

Ho2: There is no significant difference between the opinions of top-Management and other employees of the selected SMEs in Abuja, FCT, Nigeria.

## 2.0 LITERATURE REVIEW

### 2.1 Conceptual Review

This section reviews related literature in the subject area of study. It is sub-divided into four major sub-sections. The first section incorporates the conceptual framework which reviewed the basic concepts as used in the study. The second sub-section dealt with the theoretical framework, which discusses the theories that underpins or anchored the study. The third sub-section is based on the review of related empirical studies, while the fourth sub-section focuses on the summary of reviewed literature.

### 2.1 Conceptual Framework

People and businesses do marketing activities to get people to buy their products and services. Production, advertising, and selling goods and services to customers are all part of marketing. Marketing includes things like writing product details, building website pages, improving customer service, dividing the market and business into segments, and doing market research. Effective marketing strategies can help a business grow. In 2023, (The Economic Times, 2023) said, ‘‘For businesses, marketing’s main goal is to increase sales by giving customers what they want. Marketing is the process of finding, studying, and knowing the wants and needs of the target audience, In order to reach the target and get them to buy the product or service, marketers then come up with strategies and methods. Marketing alone isn’t enough to reach the right customers. We shall be discussing the various conceptual components of the independent and dependent variables of this research study below.

### 2.1.1 Concept of SMEs

Entrepreneurship, particularly, Small and Medium-sized Enterprises (SMEs), play a crucial role in spurring countries' economic development challenges (Papadopoulos et al., 2020). The World Bank (2021) reported that, most businesses are SMEs. These businesses are critical as they create a significant bulk, potentially 90 per cent, of all commercial enterprises and provide over 50 per cent of job opportunities globally. . They are responsible for up to 40 per cent in the Gross Domestic Product (GDP) in developing economies, according to a report from the World Bank(2021). The global demand for jobs is expected to reach 60 million by 2030 (World Bank, 2021), therefore, developing SMEs is critical to countries across the globe. In Nigeria, SMEs account for 94 per cent of employment (96 per cent of commercial operations) and 48 per cent of Nigeria's GDP (Price-water-house-Coopers Limited -PWC, Nigeria, 2021). SMEs account for almost 90 per cent of manufacturing jobs and more than 50 per cent of industrial jobs in Nigeria (Nigeria Bureau of Statistics, 2020; Kerdpitak, 2022).

The absence of satisfactory empirical data prevents us from determining whether significant improvements in the performance of SMEs have resulted from the implementation of digital marketing strategies since the COVID-19 pandemic. Although a subset of SMEs have resulted from the implementation of digital marketing, particularly those operating in the ICT and fashion accessories industries, most SMEs encounter barriers that impede the widespread implementation of these tactics. The challenges encompass issues such as inadequate digital skills, digital illiteracy, the danger of online deception, consumer privacy concerns and subpar internet connections (Soyinka, 2021). Small and medium-sized enterprises (SMEs) operators in Nigeria might resist adopting digital marketing strategies due to apprehension, incapability, or disinterest. Following the absence of perceived useful for digital marketing, concerns about malpractices and the extensive costs of these approaches, it becomes pertinent, for instance, to carry out a painstaking empirical verification in order to provide the evidence which is needed to confirm and ascertain how the implementation of Digital Marketing has the potential to enhance the operational performance of SMEs in Nigeria. This then constitutes the crux of this enquiry: What is the impact of digital marketing on the operational effectiveness (productivity) of selected SMEs in Abuja, FCT, Nigeria, made up of electronic mail marketing, social media marketing and online advertising.

### 2.1.2 Concept of Digital Marketing

Digital marketing, also called online marketing or web-based marketing, can be defined as the use of the internet and related digital technologies in achieving objective and to support the transactions of marketing

activities such as supply chain management, customer relationship and quality services delivery (Harrigan, 2012, 127-163). Therefore, digital marketing is the use of electronic means, devices (computer) such as smartphones, cellphones, etc. to communicate with the customers. Digital marketing techniques have thus succeeded to eradicate the classical marketing techniques and hence the extension of the marketing mixes. The flexibility provided by technology has therefore made digital marketing more significant basically in the entire sector that due to the high interconnectivity levels the internet has been compared to the wheel and the airplane in terms of its ability to influence the future business and economic development (Richard 2015, 76-85).

It is now popular and easy to market a business's goods and services through digital channels like web-sites, search engines, social media, and emails. In this type of business, technology is the most important thing. Digital marketing has become an important part of business marketing tactics as it has become more popular over the years. In the world of marketing, digital marketing include all actions done on handheld devices that have some kind of computer, such as internet-based marketing. As part of online advertising, a business can get in touch with customers through websites, search engines, blogs, social media, video, video, email, and other similar channels. Marketing used to be done in more standard ways, like through radio, TV., print ads, signs, direct mail, and events. But now, digital marketing has taken over these old ways of doing things. When compared to the old way of marketing, digital marketing works better because it lets businesses target specific groups, keep track of how well campaigns are doing, and change their marketing strategies in real time using data and analytics. Digital marketing is an evolving method that is always changing, unlike traditional marketing, which is fixed and often called "one way" exchange. People can't talk to a business through a sign or print ads, but digital marketing lets a business talk to its current or potential customers back and forth. A comprehensive digital marketing strategy can be very helpful for all types of businesses, from small start-ups to large corporations. Most of the time, a successful digital marketing plan uses a mix of different techniques, such as online advertising, search engine optimization and marketing, social media promotion and administration, and content creation (American Marketing, 2023).

### **2.1.3 Practices in Digital Marketing**

The foundation of several successful brand efforts in the last few years has been effective digital marketing. When properly implanted, a mix of channels can provide a unified, unforgettable, and shareable user experience. Nevertheless, as technology has progressed, the idea of digital marketing has extended to include a variety of platforms, including content marketing and social media outlets. Users are now spending over two hours daily on social networking platforms alone, and this number is only going to rise as technology continues



to provide them with more comprehensive and engaging experiences. Different kinds of businesses, different kinds of audiences, and different kinds of marketing goals dictate different digital marketing strategies. During that time, digital marketing strategies such as SEO, SEM, blogging, marketing on social media, email marketing, and mobile marketing were widely used.

Using various digital channels such as web pages, e-mail., Text and multimedia messaging services , social media, and applications, mobile marketers target consumers via their tablets, phones, and other mobile devices , (Kumar & Mittal, 2020). With its many advantages, mobile marketing has become an integral part of contemporary advertising. A broad audience may be reached thanks to the versatile and widely used smart mobile devices throughout the globe. The increased contact and engagement that results from mobile marketing is a direct result of the three-way communication that it enables. On top of that, marketing information can be distributed at any time, any place because to the ubiquitous nature of mobile phones. Marketers are able to design and execute successful campaigns because of the proliferation of channels and technologies made possible by modern smartphones and their increased processing capacity. Ultimately, analytics enable more targeted and engaging marketing via the use of localized and highly personalized content.

#### **2.1.4 Factors Affecting Digital Marketing**

In the current era of digital technology, organizations are turning more and more to internet advertising as an essential part for matching and interacting with the audiences they are trying to reach. Therefore, it is vital for companies to have a comprehensive understanding of the different aspects that might impact the efficiency of their attempts to market themselves online. This is because there is a large variety of digital platforms and channels that are immediately available. When it comes to developing and putting into action successful digital marketing strategies, there are a multitude of aspects to take into consideration. These include the target audience, the context, the platform, the competition, the budget, the trends and technology, as well as analytics and tracking. In light of this, the purpose of this dissertation is to investigate the many aspects that have an impact on digital marketing and to evaluate the ways in which organizations may successfully traverse these factors in order to accomplish their marketing goals.

Digital marketing is less costly than conventional marketing, but a budget is still needed. Marketers must balance organic and sponsored promotions for their brand. Blogging, videos, and social media may be cheaper. However, microsites, pay-per-click ads, and short message services need more marketing funds. Smaller companies with limited funds may benefit from outsourcing internet advertising to a specialist. They may save money and use smart digital marketing methods, (Brookins, 2023). Digital content marketing works best with

target-audiences-friendly language and images. Relevant and interesting content marketing may help businesses convert prospects into loyal customers. Quality images and infographics speak louder than words, and clever punchlines and descriptions attract clients. Digital marketing platforms can affect efficacy. Online communities, engines for searching, email, and mobile applications have different audiences and use habits. Social media is used for networking, whereas search engines are realized for information. Thus, a firm advertising a new product may utilize social media to generate brand awareness and engines like Google to drive website traffic (D.Rajagopal, 2022).

New technologies may impact digital marketing. Mobile marketing, including mobile apps, marketing via SMS, and cell-friendly websites, has increased. New platforms and services like Instagram clips and TikTok have made social media important to digital marketing. AI and machine learning are transforming digital marketing by enabling customization, robotics, and forecasting. These trends and technology may help organizations remain ahead of other businesses and improve digital marketing, (Guel, 2016). According to the study conducted by Guel (2016), a firm that wants to perform video marketing, for instance, require a digital camera, lighting, and auditory recording, technology and the expertise to utilize them, or it must have a studio to edit and record. Analytics and monitoring are extremely important in internet marketing since they provide data on the success of marketing. By evaluating website traffic, rates of clicked, sales conversions and engagement rates, determine which methods work best and adjust their strategies. Analytics may help identify the target audience's behavior, tastes, and interests to create better targeted and personalized marketing communications. Since most buyers now study online before buying, firms must be proactive with their digital marketing. Structured internet data is crucial there (Das, 2023).

### **2.1.5 Digital Marketing in Nigeria**

The digital marketing industry in Nigeria is rapidly increasing, with a significant focus placed on technological advancement and innovative ideas. With a high internet penetration rate, a robust information technology sector, and a population that is well-versed in technology. Nigeria is among the fast-developing digital marketing economies. The fact that this is the case makes it an attractive market for businesses that are working to expand their digital presence. In order to have a better understanding of the real-world statistics about digital marketing in Nigeria, the following elements have been arrived from research: Advertising expenditures in the online advertising sector are anticipated to reach \$1,080.00 million in the year 2023. In 2023, the market volume for search and advertising is projected to be \$502.80 million, making it the most lucrative section of the industry. When compared to other countries, the United States will be responsible for the majority of

advertising spending: \$297.40 billion in 2023. In 2023, it is anticipated that the average amount of money spent on advertisements by each user in the internet search advertising category would equal to \$96.36. In the year 2027, mobile advertising will account for forty-four percent of the overall advertising expenditure in the world of digital advertising. By the year 2027, programmatic advertising will account for 91% of the total income earned by digital advertising in the market for digital advertising, (Jocelyn, 2022). Nigeria's digital advertising market is expected to spend less than the worldwide average. Search advertising dominates Nigerian digital advertising. Search ads expenditure per user is also lower than the worldwide average. Mobile advertising is predicted to be responsible for 44% of digital advertising expenditure in Nigeria by 2027, while programmatic advertising will produce 91% of income (Jocelyn, 2022). Search and mobile advertising provide companies in Nigeria several ways to contact their target audience even if the level of digital advertising is less than in other countries. Data-driven marketing methods are very important in Nigeria due to the rise of programmatic advertising.

### **2.1.6 Importance of Digital Marketing**

The way companies promote, connect with customers and get new customers have changed a lot because of digital marketing. Digital marketing gives small businesses a lot of chances to grow. For a low cost and easy to track, the company can now sell to people not only in their own towns but also through the entire nation and even the world. It also gives you new ways to interact with prospects, which leads to two-way talks that build trust and brand loyalty. You can also get to know your customers better and in a new way through this conversation. In the future, this means that marketing plans can be made that are more specific and fit the needs of the business. Digital marketing lets you get in touch with people in lots of different ways. You could, for instance, live shows on the Instagram page for your business and talk to customers about goods and goals (Rukhaiyar, 2022). These online interactions are sneaky ways to advertise and get people interested in what you have to say.

Digital marketing is essential for small companies since it has the potential to reach a greater number of people, in addition to constructing a bigger client base in a shorter amount of time and at a lower cost than conventional marketing strategies. In addition, digital marketing produces outcomes that are both more specific and quantifiable, which enables firms to monitor their performance in a manner that is both more accurate and more comprehensive. A further benefit of digital marketing is that it may assist small companies in connecting with their customers in a manner that is more personal and relevant, so enhancing the quality of their relationships and fostering more customer loyalty (Jolliffe, 2023).

Receiving clients is the primary emphasis of a firm that is just getting started. Entrepreneurs of small businesses sometimes have a tough time locating new customers. In the process of formulating a marketing plan, many proprietors of small businesses have a sense of disorientation and an inability to successfully implement a marketing plan that is successful. The owners of small firms sometimes struggle to get positive outcomes due to the restricted marketing expenses available to them. By marketing your service or good to prospective clients, you will be able to increase the number of customers you have and increase your revenue. The most effective method for reaching prospective clients is via digital marketing. If you build an efficient marketing plan and choose the appropriate platform to offer your goods and services, marketing may assist you in attracting a greater number of clients towards your business. The digital marketing approach, in contrast to more conventional types of advertising enables you to target a specific audience that is interested in your company (Pant, 2020).

## **2.2 Theoretical Framework**

Several theories abound to serve as platform for the explanation of the nature, processes, manifestations and variables of Digital Marketing and SMEs productivity. However, the theories that anchor or underpin this study were the Generational theory, the Social Network theory, and the Collective Intelligence theory. A brief discussion of these theories and their relevance to the study is instructive here.

### **2.2.1 The Generational Theory**

This theory explains that the era in which a person was born can impact his/her perception of the world at large. It also indicates that our values are shaped over the years either by our families, friends, society, events, or the general year in which we are born (Jurkiewicz & Brown, 1998, 365-392). Generational marketing theory thus, stipulates that consumers born during the same era generally have similar behavior due to the influence they had or has been molded. This current era can be defined as that of digital or technological information which can be defined using social media. Generational theory is relevant to digital marketing based on how each generation make use of the available information at their disposal. This theory is thus useful to the study since it helps SMEs to identify customers' needs and hence formulate appropriate marketing content for them using the information

### 2.2.2 The Social Network Theory

The network method originates from diverse structural concepts initiated by sociological thinkers such as Georg Simmel and anthropologists whose studies were based largely on understanding of the different social networks. Social networks theory therefore analyses all kinds of relationships, be they people, animals or things. Social networks thus, is used for learning for learning about patterns that manifest within social networks and their effects or attitude. Digital marketing tools are therefore, essential in this regard since they permit marketers to listen and to comprehend what is said by their clients, and also permit them to take advantage of different potential used so as to be able to spread the message to others in their respective networks. Most studies have shown that potential users are the most influential on the diverse networks. The social network theory sees social relationships in terms of lumps and stalemates. They act as players within the context of the network and are somehow related to the players. Several types of stalemates are therefore presented for analysis. Social networks can also be used to calculate the owner's equity in an enterprise. These ideas are generally demonstrated in social network diagrams or frequencies. In summary, the theory is useful in this theory since it permits us to diagnose how SMEs can exploit their networks towards satisfying their clients (Durkin, Pauric & Niall, 2013, 374-379).

### 2.2.3 The Collective intelligence Theory

The collective intelligence theory refers to a process where huge number of persons has coverage together at certain level of how-how, while at the same moment, trying to attain their objectives. The collective intelligence states that groups are usually more productive than when they operate differently. For collective intelligence to exist and exert, it needs at least four main things, i.e. honesty, spreading/distribution, peering and acting universally.

Honesty is for collective intelligence to operate correctly; people or enterprises need to present and be sincere about their ideas to the persons using internet so that their product can be truly wealthy. Peering is considering old information or products and modifying them to suit the new ones so that people can use them. Spreading shows how intellectual property can be shared or distributed to other members. It is thus, important for us to allow a persistent exchange of ideas and open critics which can better enhance the productivity of the enterprise. Universal acting is based on information technology and the level of advancement that enterprise has made to organize and collaborate with all her networks. This permit to overcome challenges such as local acting or thinking and put more efforts on new ideas, new talents and niche market. In summary, the theory contributed

to this study which indicate how digital marketing can help bring SMEs and her diverse clients together with better interactions which could go a long way to strengthen their performance (David, 2004, 952-958).

### 2.3 Related Empirical Studies

Several scholars' works and studies abound on the subject matter of Digital Marketing and SMEs productivity. We shall discuss these empirical studies, highlighting how they relate to the present research and also identifying the gaps in literature. We shall equally discuss how this present study filled these literary gaps.

Rassol et al., (2021) in their study conducted on 12 Microfinance Banks (SMEs) in Kenya to investigate the impact of digital marketing on SMEs productivity utilized the descriptive research design, a simple random sampling technique to delineate the sample size (population) for the study which stood at 246 employees out of the total population of 2,460 employees of the 12 MFBs. Structured questionnaires were employed to gather data for the study while independent t-test was utilized in the test of hypotheses of the study. Chi-Square statistic was adopted for the analysis of study data along with the SPSS Version 24. The study of Rassol et al., (2021), opined that the brand experience with a bank positively influence customer loyalty. When consumers perceive bank to be responsive to customer requests, it facilitates the overall banking experience of customer by making them loyal to that bank, which will increase the viability of their business. Moreover, according to the study conducted by Yuliyasti et al., (2018), brand experience has a positive and significant impact on customer loyalty when using commercial bank credit. This means that positive experience during use, which are consistently perceived by consumers, dorm stronger loyalty among consumers toward a brand (Yuliyasti et al.,2018), which encourages repeat patronage.

Pullizi & Barretti (2009) conducted a study to identify the importance of content form of digital marketing on selected SMEs in Nicaragua. They opine that content form of digital marketing applies a format that includes engaging various customers by creating and sharing of content. These specific contents, they reiterated, are usually disseminated on blogs, videos, e-books, and info-graphics, increase of traffic on the company's website to aid brand building is basically responsible for adopting this digital marketing strategy.

Kenyan and Li (2017) conducted their study using 17 SMEs in the manufacturing sector of the UK economy to identify the impact of digital marketing on organizational efficiency. Ex-post facto research design methodology was employed while Taro Yamane was adopted in determining the sample size for the study. Descriptive and inferential statistic was employed in the analysis of study data. The study finding reveal a positive and strong relationship between digital marketing and organizational efficiency. Again, consumers trusted more in the nature of the web with the safety and security of privacy and personalization in their



assumed personal value. It was recommended that SMEs should adopt digital marketing tools and techniques in their business dealings in order to enhance their efficiency, productivity and overall performance.

Teuta Verseli-Kurtishi (2023) conducted a study entitled ‘‘The Impact of Digital Marketing on the Performance of Small and Medium-Enterprises (SMEs) on North Macedonia’s 165 SMEs. He adopted a mixed method research design and stratified random sampling in determining the sample size adopted for the study. The findings of this reveal that SMEs in North Macedonia are increasingly utilizing digital marketing strategies, with social media marketing found to have a significant positive impact on SME performance, particularly in terms of increasing sales revenue and enhancing customer engagement. Overall, this study underscores the importance of digital marketing initiative and SME performance.

Parujuli (2023) conducted his study entitled ‘‘Digital Marketing: Marketing local business through online platform’’. Secondary data from a poll questionnaire was used to back up the information for data collection. The poll was made to find out how important social media marketing is for local businesses. The results of the study showed how social media marketing can help small businesses in many ways. It shows how marketing on social media can help small businesses grow and stay alive in a world that is becoming more and more digital.

Salhab (2024) in his study titled: Analytical Study on the Impact of Digital Marketing Strategies and Performance of Small and Medium-sized Companies conducted in 32 Jordanian SMEs. The research investigation employed a cross-sectional survey design. Primary data used for this study were obtained from 295 administrators of SMEs in Jordan through a systematic questionnaire. The statistical testing of the study’s assumptions was conducted utilizing multiple linear regression with the assistance of the SPSS 23. During the new average period, social media websites marketing, using internet for advertising, and electronic mail for marketing had positive effects on performance, according to the study’s findings. The study concluded that SMEs enhance their sales and marketing performance by utilizing online advertising devices (including search engine, display, and website advertising), social media platforms (including Facebook, Instagram, and WhatsApp) and electronic mail marketing tools (including welcome electronic mail newsletter, and dedicated electronic mail promotions).

### 2.3.1 Gaps in Knowledge

The researcher having reviewed extensively the literature available in this subject matter identified some relevant gaps in literature. The researcher was not privileged to discover any empirical study that extensively dealt on the Impact of Digital Marketing on Productivity in Selected SMEs in Abuja, FCT, Nigeria. In fact, this study ranked as the first in this geographical locale (Abuja, Nigeria). Hence, this study filled the gap of

geographical scope that was absent in previous studies. Secondly, while many previous studies adopted qualitative method of study, this present study was fully a quantitative and empirical study in its entirety; Thirdly, this study engaged a plethora and comprehensive literature reviews of virtually all previous works conducted in the subject matter; highlighting a strong and positive relationship between Digital Marketing and Productivity of Selected SMEs in Abuja, FCT, Nigeria.

## 2.4 Summary of Reviewed Literature

The researcher reviewed the conceptual framework; highlighting and explaining the independent and dependent variables of the study. He identified and discussed the three theories underpinning the study. He discussed exhaustively the related previous empirical studies conducted by authors in this subject matter, identifying the gaps in literature which he attempted to fill in the present study

## 3.0 METHODOLOGY

The design for this study is a descriptive survey method. It is used to describe what is existing and to answer the research questions stated by the researcher for the study. The population of this study comprised of all the employees of selected SMEs in Abuja, FCT., totaling 1,200. The population is made up of 800 males and 400 female traders. Simple random technique was adopted for this study. In order to achieve a sample size that is representative of the total population, the researcher adopted a 10% of the total population totaling one hundred and twenty (120) employees in the selected SMEs in Abuja, FCT for the study.

One research instrument was used for this study was questionnaire which was entitled: The Impact of Digital Marketing on the Productivity of Selected SMEs in Abuja, FCT, Nigeria was used to collect data for this study by the researcher. The reason for using questionnaire was based on the following advantages. Firstly, it can give objective and reliable information of it is carefully and well-constructed. Secondly, it is relatively effective and easier to score and administer. Questionnaire is a good representation of group test and owing to the nature and diversity of the population, questionnaire methods becomes necessary. The questionnaire is divided into two sections to enable the researcher obtain information from the respondents; the questionnaire will be designed in such a way that it provides the following sections (Section A; consisting of respondent personal information (data); while Section B consists of the structured questions to technically elicit information from the respondents on the subject matter. It was subdivided into strongly agreed (5), agreed (4), undecided (3), disagree (2) and strongly disagree (1) questionnaires will be adopted by the researcher. The Likert scale consists of a list of statement that has relationship with the issue in the question, it does not only allow the

respondent to check those statements in which they agree or disagree but allows the respondent to state the degree of agreement or disagreement with every statement (Osuala, 2007).

Face and content validity is employed in this study, the researcher employed the help of some Senior members of the Faculty of Management Sciences (NOUN). After going through the work, they advised the researcher to see a statistician who will scrutinize the objectives of the study, research questions, research hypotheses as well as the methodology of the study. The draft questionnaire was also presented to the project supervisor for necessary corrections and adjustments before the final copy was printed out for use in the research work.

In order to establish the reliability of the instrument, pilot study was carried out. The essence of pilot study was to test the adequacy and suitability of the instrument in measuring what it is supposed to measure and to ascertain any difficulty that the researcher may encounter. For the purpose of this, a total of (12) copies of the questionnaire representing 10% of the total population of study were administered to the selected SMEs in Abuja, FCT, Nigeria. They were filled under the supervision of the researcher. The filled questionnaires were collected and subjected to statistical analysis in order to determine the reliability co-efficient of the instrument as well as the internal consistency of the items within the instrument.

The data collected from the pilot study was analyzed using Cronbach Alpha techniques and reliability index of 0.85 was obtained. Bennett (2006) testified that for a scale to be considered reliable, it should have an alpha value of 0.50 to 1. With the level of reliability index of 0.85, the instrument was considered reliable for use in the main study.

To administer the validated instrument of the study, an introductory letter was collected from the head of department and presented to some members of the Management team of the selected SMEs and other employees that were randomly selected. The research assistants were educated on how to distribute the questionnaires and who is qualified to be given the questionnaire.

The analysis of data for this study was done based on the hypotheses formulated. The researcher used descriptive statistical method for bio-data presentation. Measures of relationship between the variables were being carried out using independent t-test. The simple percentage, mean score and standard deviation was used to answer the research questions. All hypotheses were tested using the independent t-test at 0.05 alpha level of significance like what is obtainable in other social science. The reason for adopting these statistical tools is to test whether there will exist some significant differences or not and either to retain or reject the null hypotheses.

#### 4.0 Data Analysis, Interpretation and Discussion

This chapter presents the data collected, the analysis carried out and the discussion of the results obtained. The analysis is presented in sections. The first section presents the frequency and percentage distribution of bio data respondents and nominal questions as responded by respondents. The second section presents the answers to the research questions using descriptive parameters of mean scores and standard deviation. The third section presents the testing and interpretation of the two null hypotheses using parametric statistical techniques of independent t-test. All hypotheses were tested at 0.05 alpha level of significance. The major findings are then revealed before the discussions of the major findings.

#### 4.1 Analysis of Demographic Information

Descriptive statistics was used to analyze the demographic information of the respondents, these included the use of frequency and percentage.

**Table 4.1.1: Bio-Data of Respondents**

S/No.	Bio-data	Category	Frequency	Percentage (%)
1.	Status	Top-Management	10	9.3
		Managers	30	25.0
		Other employees	80	65.7
2.	Gender	Male	70	58.3
		Female	50	41.7
5.	Qualifications	M.Sc./M.Ed/MA/MBA	25	30
		B.Sc/B.Ed	20	24
		NCE/OND	50	60
4.	Years of experience	0- 5 years	60	72
		6 - 10years	20	24
		11 - 15 years	20	24

On the status of the respondents, 10 representing (9.3%) were top-Management executive, 30 representing (25.0%) were Managers, while 80 representing (65.7%) were other employees of the organization. Table 4.1.1

above showed that 70 representing (58.3%) were males and 50 representing (41.7%) were females. According to Table 4.1.1, 25 representing (30%) had M.Sc/M.Ed/MA/MBA degree, 20 representing (24%) possess B.Sc/B.Ed degree while 50 representing 60% had NCE/OND. On the respondents' working experience, from the table above showed that 60 persons representing (72%) had worked between 0 – 5 years, 20 persons representing (24%) had worked between 6-10 years, while 20 persons representing (24%) had worked between 11 – 15 years respectively.

#### 4.1.2 Answering of Research Questions

This section presents the result of this study based on the data analysis. They were presented on the basis of the five research questions and two null hypotheses that guided the study. The researcher used 3.00 as the mean otherwise known as decision mean since the instrument was structured along a modified five Likert scale structure to take decision on whether to accept or reject the research questions after comparing it with the qualitative mean. Therefore, a mean score of 3.00 and above indicate positive response to the research question and accepted while a mean score below 3.00 indicate negative answer to the research question and rejected.

This is shown below:

- SA - 5 points
- A - 4 points
- UD - 3 points
- SD - 2 points
- D - 1 point

$$\frac{5 + 4 + 3 + 2 + 1}{5} = \frac{15}{5} = 3.00 \text{ (Decision Mean)}$$

#### Research Question One:

What is the impact of digital marketing on business performance and productivity of SMEs in Nigeria?

The data for providing answers to the above research question is presented on Table 4.1.2 below:

**Table 4.1.2: Mean and Standard Deviation Ratings of the impact of digital marketing on business performance of SMEs in Nigeria**

S/No.	Questionnaire Items	Mean	SD	Decision
5.	Digital marketing has reduced the real time cost of advertising among SMEs in Nigeria	4.22	1.05	Agreed
6.	Digital marketing has wider coverage of customers unlike the traditional marketing channels like radio, television, etc	3.99	0.97	Agreed
<b>Cluster</b>		3.85	1.03	Agreed

The respondents in Table 4.1.2 agreed that there is a strong positive relationship between digital marketing and business performance and productivity of SMEs in Nigeria. The variation of opinions of respondents symbolized by the mean ratings ranges between 3.99 and 4.22 while the standard deviation (SD) ranges between 0.97 and 1.05 respectively.

**Research Question Two:**

What are the traditional marketing channels and its drawbacks on the performance of SMEs in Nigeria?

The data for providing answers to the above research question is provided in Table 4.1.3 below:

**Table 4.1.3: Mean and Standard Deviation Ratings of the traditional marketing channels and its drawbacks on the performance of SMEs in Nigeria**

S/No.	Questionnaire Items	Mean	SD	Decision
7.	The traditional marketing channels includes radio, TV, telephone, etc.	4.31	1.08	Agreed
8.	The traditional marketing channels have been overtaken by digital marketing channels (email marketing, internet marketing, e-commerce, e-business, etc.	4.20	1.10	Agreed
<b>Cluster</b>		4.20	1.09	Agreed



The respondents in Table 4.1.3 agreed that that the traditional marketing channels is fast being replaced by digital marketing channels, due to its cost reduction, wider coverage of clientele, and time-saving devices. This acceptance was symbolized by the above mean score ratings ranging between 4.20 and 4.31 and the standard deviation ranging between 1.08 and 1.10 respectively.

### Research Question Three:

What are the impacts of the various digital marketing channels on SMEs productivity in Nigeria?

**Table 4.1.4: Mean Ratings and Standard Deviation of the impacts of various digital marketing channels on SMEs productivity in Nigeria**

S/No.	Questionnaire Items	Mean	SD	Decision
9.	Digital marketing channels such as email, internet, facebook, tik-tok, Instagram, e-business etc, have greatly increased productivity of SMEs in Nigeria	4.01	0.92	Agreed
10.	Digital marketing is the latest marketing techniques for organizational efficiency and performance in the 21 <sup>st</sup> century	3.99	0.95	Agreed
Cluster		3.99	0.91	Agreed

The respondents in Table 4.1.4 accepted that digital marketing channels have strong and positive relationship with SMEs productivity in Nigeria. This was symbolized by the mean ratings ranging between 3.99 and 4.01 while the standard deviation (SD) ranges between 0.92 and 0.95 respectively.

### Research Question Four:

What are challenges facing effective adoption of digital marketing technologies in enhancing SMEs productivity in Nigeria?

**Table 4.1.5: Mean and Standard Deviation Ratings of the challenges facing effective adoption of digital marketing technologies in enhancing SMEs productivity in Nigeria**

S/No.	Questionnaire Items	Mean	SD	Decision
11.	Poor infrastructural facilities such poor as power supply, internet fraudsters, poor networking, high level of poverty, lack of trained personnel for digital technology transfer, etc have contributed to low digital marketing activities in SMEs and other organizations in Nigeria	4.24	1.05	Agreed
12	Poor government support and weak regulatory policies in monitoring, apprehending and punishing internet have contributed to low patronage of digital marketing in Nigeria	3.92	1.07	Agreed
Cluster		3.92	1.04	Agreed

Respondents in Table 4.1.5 accepted that there are several challenges facing adoption of effective digital marketing technologies in enhancing SMEs productivity in Nigeria. This was symbolized by the mean ratings ranging between 3.92 and 4.24 while the standard deviation (SD) ranges between 1.05 and 1.07 respectively.

#### 4.2 Test of Hypotheses

The following hypotheses will be tested at 0.05 alpha level of significance.

**Table 4.2: t-test of Hypotheses on Ho1 and Ho3**

S/No	Hypotheses	Cate gory of Resp	N	- N	SD	T- CD	DF	T. T A B	Decisio n
1.	There is no significant difference between the mean ratings and opinions of male and	Males Fema	120	4.01	1.15	- 1.6 2	541	1.9 6	Accepte -d

	female respondents in the selected SMEs in Abuja	les							
2.	There is no significant difference between the mean ratings and opinions of the top-Management executive and other employees of the selected SMEs	Top-Mgt. Executives Other employees	120	3.89	1.01	-1.62	541	1.96	Accepted

Significant level = 0.05

#### 4.2.1 Hypothesis One (Ho1):

Hypothesis (Ho1) states that there is no significant difference between the mean ratings and opinion of male and female respondents in the selected SMEs in Abuja, FCT, with regards to the impact of Digital Marketing on SMEs Productivity in Abuja, FCT, Nigeria. The hypothesis was tested at 0.05 alpha level of significance. From the table 4.2 above, the calculated t-values, (-1.62) is less than the t-calculated (1.96). Hypothesis (Ho1) is therefore accepted.

#### 4.2.2 Hypothesis Two (Ho2):

Hypothesis (Ho2) states that there is no significant difference between the mean ratings and opinions of the top-Management executive and other employees in the selected SMEs in Abuja FCT Nigeria with regard to the impact of digital marketing on Selected SMEs in Abuja, FCT, Nigeria. This was tested at 0.05 alpha level of significance. From table 4.2 above, the calculated t-value (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho2) is therefore accepted. Respondents therefore accepted in all clusters, there is no significant difference between the opinions of male and female respondents and the top-Management executive and other employees of the selected SMEs in Abuja, FCT, Nigeria.

### 4.3 Summary of Major Findings

The findings from this present research are consistent with the hypotheses. The outcome of the independent t-test analysis revealed that strategic marketing (SM), online advertisement and electronic mail marketing significantly and positively enhanced the efficiency/performance of SMEs in their bid to achieve sustainability in the period of the ‘new normal’. Hence, the major findings are hereby summarized below:

- i. That digital marketing is the latest marketing technique in the 21<sup>st</sup> century marketing practice. It is therefore expedient that Managers and operators of SMEs in Nigeria key into these digital marketing channels to boost their productivity;
- ii. That the government have a major role to play in checkmating the obnoxious fraudulent activities of internet, e-mail, social media (facebook, Tik-Tok, Instagram, etc. scammers through the enactment and implementation of proactive policies aimed at curbing this social malaise;
- iii. That Managers of SMEs should be pragmatic and proactive in their adoption and implementation of Digital marketing techniques in their daily business dealings;
- iv. That operators of the SMEs should encourage and motivate employees who acquire sound CT expertise who in turn serve as coaches and mentors to other employees. This will greatly improve organizational productivity.

### 4.4 Discussion of Results

The body of literature presented by Muniesa et al., (2020); Olusegun et al., (2020); and Saleh (2020) from which the research hypotheses formulated provided great support that strategic marketing, online advertisement, and electronic mail marketing significantly and positively influenced the small and medium-sized enterprises (SMEs). With the recent COVID-19 pandemic, SMEs can significantly improve their sales and marketing effectiveness by developing digital marketing strategies, including strategic marketing, online advertisement, and electronic mail marketing. Hence, this research has provided enough empirical evidence to objectively validate that digital marketing strategies significantly and positively affect the productivity of SMEs in Nigeria.

### 5.0 Implications, Conclusion and Recommendations

This research study is on the assessment of the impact of digital marketing on SMEs productivity in Abuja, FCT, Nigeria. The main objective of this study is to investigate the impact of digital marketing on the productivity of selected SMEs in Abuja, FCT, Nigeria. The study also seeks to examine the challenges facing the effective operations of digital marketing in the SMEs sector of the Nigerian economy.

## 5.1 Implications of the Research Findings

Based on the results of analysis for the study, it was revealed that this study were detailed as this study has relevant implications for operation of digital marketing. Hence, the implication of this study are as follows:

- i. Digital marketing technologies have replaced and overtaken the traditional marketing channels like radio, Television, Newspaper etc;
- ii. Today's digital marketing techniques are applicable in every business activities across the globe;
- iii. Digital marketing activities have greatly improved and boosted organizational productivity of SMEs in Nigeria, particularly in Abuja, FCT;
- iv. The challenges facing digital marketing in SMEs operations can be surmounted by effective government regulatory policies.

## 5.2 Conclusion

According to research, a significant number of customers are actively participating in social media. In spite of the fact that there is still place for conventional marketing, online marketing is rapidly becoming the normal approach for local businesses to reach out to new clients. According to the findings of the study, the age that is most likely to be the online customers for local companies is the one that fall between the age of 20 and 30. In the past, all that was required to establish a devoted client base was a storefront that was both appealing and located in a busy street. In today's world, people do not pay attention to your company since they are so preoccupied with their cellphones than they are trolling down the street. Despite the fact that there are a great number of social media sites, business owners should strongly consider using these platforms as their primary tool for marketing their services and products.

Customers who are considering doing business with you could have overlooked your company on their way to a competitor merely due to the fact that it is more accessible online. Because of your web presence, it is possible that this consumer was aware of your business you chose to place their faith in your rival. Online marketing is not only vital for increasing sales, but it is also important for gaining customers' trust and making them delighted to purchase from your company. Digital marketing is focused on increasing sales. Despite the fact that aggressive sales tactics may still be effective, customers are more inclined to seek out businesses that provide them with free advice, helpful tools and enjoyable diversions in order to satisfy their needs.

Additionally, they have a tendency to choose businesses that treat them as individuals rather than as a means of generating cash. Local companies who promote themselves online have a competitive advantage over those that

do not sell themselves online since these interactions are made possible by online marketing channels such as social media, mobile cellphone, and email.

### 5.3 Recommendations Based on Research Findings

Based on the research findings of this study, the following recommendations were proffered:

- i. That digital marketing strategies significantly influence the performance of SMEs in the current era, which is characterized by changing norms;
- ii. That digital marketing channels e.g. strategic marketing, internet advertising, and electronic mail marketing have a significant and advantageous effect on SMEs performance during the current transformation;
- iii. That social media marketing is the most effective digital marketing technique for SMEs in Nigeria;
- iv. That online advertising exerted the second most significant level of influence and impact on SMEs productivity and overall profitability and organizational performance.

This study focused on an assessment of the impact of digital marketing on the productivity of SMEs in Abuja, FCT, Nigeria. It is necessary that further research be conducted in this area of study; possibly on the impact of digital marketing in the public sectors of Nigerian economy.

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## THE EFFECTS OF EFFECTIVE COMMUNICATION ON ORGANIZATIONAL PERFORMANCE (A STUDY OF NIGERIAN GEOLOGICAL AND SURVEY AGENCY, ABUJA, NIGERIA)

**DR CHUKWUEMEKA GODSON EME**

**Lecturer, Department of Business Administration, Faculty of Management**

**Sciences; National Open University of Nigeria (NOUN), Jabi-Abuja,**

**Nigeria; Tel: +234, (0), 49929862; E-Mail: [ceme@noun.edu.ng](mailto:ceme@noun.edu.ng);**

**[kaluchukwuemeka26@yahoo.co.uk](mailto:kaluchukwuemeka26@yahoo.co.uk)**

### **ABSTRACT**

Effective communication has been widely acknowledged as a way to enhance organizational performance. The study empirically examined the effects of effective communication on organizational performance adopting the Nigerian Geological and Survey Agency, Abuja, FCT, Nigeria as a case study. Descriptive research design was adopted for the study. The objectives of this study amongst others were to identify the factors affecting effective communication based on the systems theory and in addition to devise a communication model that addresses these factors to improve organizational performance. The theory that underpins or anchored this study is the Systems Theory. A quantitative approach was used to describe and analyze data collected for the study from 120 respondents which was 10% of the total population of 1,200 delimited using a simple random sampling. Questionnaire data collection approach was used to identify factors affecting effective communication. Descriptive statistic using percentages, mean and standard deviation was adopted for this study. The hypotheses were tested using inferential statistics (the independent t-test). The study finds out that all the independent variables have direct relationship to organizational performance. The study also found that upward and diagonal communications have positive and direct relationship with organizational performance. More importantly, upward and horizontal communications have significant effect on organizational performance. Based on the research findings, the Nigerian Geological and Survey Agency Abuja Nigeria is recommended to strengthen cooperation and collaboration among staff members in different departments and hierarchies to create smooth and effective communication at all levels of the organization. Organizational performance could be improved if the bottlenecks of directions of communication in the organization has improved.

**Key Words: Effective Communication, Organizational Performance, Employee Commitment, Employee engagement, Nigerian Geological and Survey Agency (NGSA), Abuja, FCT**

## 1.0 Introduction

Communication is the transfer of information from sender to receiver, implying that the receiver understands the message. Communication is also sending and receiving of messages by means of symbols. In this context, organizational communication is a key element of organizational climate Drenth et al. 2019. Organizational communication is the process by which individuals stimulate meaning in the minds of other individuals by means of verbal or non-verbal messages (Richmond et al., 2022).

It is a continuous process between the two parties involved and it occurs in many levels, such as intra-individual communication level (Keith, 2021). Communication can also occur within or between an individual and group. The main purpose of this study was to examine the effects of effective communication on organizational performance adopting the Nigerian Geological and Survey Agency as a case study. It is obvious that that the objective of every management is to achieve the organizational goals more easily and effectively. To do so, coordination among the various individuals of different departments, and coordination between the organizations and outsiders is required this is only possible through effective communication.

Communication makes a chain of relationship among different individuals or it makes a bridge of understanding between two or more people through a process of sender sending the message to the receiver by encoding it and receiver responding to it by decoding it. Almost half of the success of the plan depends upon how they have been communicated to the subordinates by the superiors. Communication has a major role to play in achieving the organizational goals. But it is identified that communication is not given as much attention as needs to be given.

Communication can be defined as the process of transmitting information from one person to another to created common understanding among people. The elements in communication process determine the quality of communication. A problem in any one of these elements can reduce communication effectiveness (Keyton, 2021). Information must be encoded into a message so that it can be understood as the sender wanted. Selecting the right medium for transmitting the message is an important issue, because of communication barriers.

Effective communication is a two-way process that requires effort and skill by both sender and receiver, therefore managers should take this into their account that each of these roles in the communication process is indispensable. Puth (2002) perceived that performance within an organization could be improved significantly by two-way of sharing information with employees and involving them in policy making. However, this recuperates general employee satisfaction and productivity within an organization. In some cases, the communication gap that exist between managers and employees makes them to generally sense not trustworthy, respected or valued to be responsible in their field of work. In his studies, it was argued that the enormous

valuable resources within an entity are the employees, therefore, it is the responsibility of managers to encourage and motivate two-way flow of information to maximize organization's performance as well as employee productivity.

Therefore, effective communication is essential and critical for all employees at all levels as well as other stakeholders. Besides these, effective communication plays an important role to organize and coordinate resources in the organization to use effectively and efficiently with less cost but high quality. Meanwhile effective communication plays crucial role to create awareness and promote about service or product which the organization delivers to the target customers.

Effective communication is critical for the success of an organization, because organizations are becoming more complex both in structure and technology. It helps in establishing links among different hierarchies and departments. Since communication avoids confusion, misunderstanding and delays in administration, organizations can achieve their objectives through achieving maximum productivity with minimum cost. Besides these, it contributes a lot in building genuine workforce relation. The effect of communication has been noted for years. According to Gray (2022), communication is a significant factor in determining both employee and organizational performance. Employees' communication is the dissemination of information which is related to the daily performance of an employee's job.

Managers have at their disposal various communication tools which when well-balanced and comprehensible can enhance communication (Bsoul, 2023). Based on different projects within an organization, employees form teams and groups. Teams and groups within every organization use communication to solve underlying problems within those groups. (Pop & Dumitrascu, 2023). Leaders must empower and support employees to solve problems and to control quality (Fletcher, 2019). They are significant for delegating work and avoiding unnecessary conflicts (Agrawal, 2022; Pop & Dumitrascu, 2023).

According to Booth (2017), the systems theory is more relatable to communication. It recognizes the role that communication plays in helping efficient functioning between the various components of the organizations. In systems theory, the whole determines the character and function of parts (Weckowicz, 2022). This means that the main systems are designed into subsystems, making up the whole system, which operates within a larger environment. Conferring to Salem (2019), the systems theory operates from primary principles of interrelatedness and interdependence, it can be said that the same basic principles form the basis from which communication audit occurs. Every organization has a hierarchical structure with the various sections functioning as a whole structure and all the staff working towards a common goal. The systems theory is

therefore appropriate for this study. Given this, the researchers would determine the effect of effective communication on organizational performance.

Focusing on sound effective communication can be instrumental in improving the accuracy and speed with which employees perform their tasks, coupled with their improvements such as structures that will facilitate the ease of access and flow of communication (Robert et al., 1957, as cited in Okikiola, 2021), Current organizational works requires organizations to focus more on effective communication processes since tasks are becoming more complex due to multicultural work environments. Communication is an indispensable function in organizational performance, Getting the message across effectively and having it understood is a prerequisite to progress. There is no point in moving forward if the basic message is lost, or there are barriers in the process. It is with this backdrop that a study on effects of effective communication on organizational performance was undertaken.

### 1.3 Statement of the Research Problem

Many organizational dispute and conflicts arise due to failure in effective communication. Lack of effective communication therefore among stakeholders can lead to several problems such as poor performance, strained interpersonal relations, poor service, and dissatisfied customers (Kazoleas and Wright, 2021). Past research shows that communication focuses on information and knowledge-sharing activities within organizations, which are led by leaders that have the responsibility to distribute information and knowledge to employees in the organization and across departments (Jimenez-Castillo & Sanchez-Perez, 2023). However, managers today still focus more on meeting overall organizational targets, thereby forgetting to communicate with all stakeholders.

When stakeholders are not well-informed, they cease to give reliable sources of information about the organizations as they may lose corporate clients and experience reductions in revenue. Furthermore, the constant delay in accessing information by staff seems to limit their performance, which could create maladministration in coordinating of organizational activities (Richard and McCroskey, 2019). Therefore, performance of employees in relation with their duties and responsibility seems to question their communication techniques in terms of performance in the organization. Moreover, it is without question that success lies in the root of good communication, particularly in matters of delivery and development (Greenberg and Baron 2018). It fosters the necessary environment for the pursuit of partnerships leading to shared growth and better lives. It is with this backdrop that the research sought to investigate the effects of effective

communication on organizational performance adopting the Nigerian Geological and Survey Agency, Abuja FCT, as case study.

#### 1.4 Objectives of the Study

The main objective of the study is to investigate the effects of effective communication on organizational performance in Nigeria adopting the Nigerian Geological and Survey Agency, FCT, Abuja as a case study. The specific objectives of the study were:

- i. To assess the factors affecting effective communication at the Nigerian Geological and Survey Agency, Abuja, FCT;
- ii. To highlight the practices of communication, and organizational performance at Nigerian Geological and Survey Agency, Abuja FCT;
- iii. To examine the relationship between directions of communication, and organizational performance at the Nigerian Geological and Survey Agency, Abuja FCT;
- iv. To find out the employees' opinion about the directions of communication at Nigerian Geological and Survey Agency, Abuja FCT, Nigeria;
- v. To identify the barriers to effective communication and proffer appropriate measures to eradicate it.

#### 1.3 Research Questions

In line with the purpose of this study, the following research questions were formulated.

- v. What are the factors affecting effective communication at the Nigerian Geological and Survey Agency, Abuja, FCT?
- vi. What are the practices of communication and organizational performance at the Nigerian Geological and Survey Agency, Abuja FCT?
- vii. What is the relationship between directions of communication and organizational performance at the Nigerian Geological and Survey Agency, Abuja, FCT?
- viii. What are the employees' opinion about the directions of communication at the Nigerian Geological and Survey Agency, Abuja FCT?
- ix. What are the barriers to effective communication and the measures to eradicate it at the Nigerian geological and Survey Agency, Abuja, FCT?



### **1.4 Research Hypotheses**

In line with the purpose of this study, the following null hypotheses were formulated and will be tested at 0.05 alpha level of significance.

Ho1: There is no significant difference between the opinions of male and female respondents at the Nigerian Geological and Survey Agency, Abuja FCT.

Ho2: There is no significant difference between the opinions of the Top Management Staff and other Staff at the Nigerian Geological and Survey Agency, Abuja, FCT.

### **1.6 Significance of the Study**

Firstly, this study is important because it will serve as a model for studying communication in various organizations in Nigeria and shed light on the challenges that employees face with communication in Nigerian organizations that may affect organizational performance. Secondly, this study will be relevant for decision-makers in organizations as it will enable them to decide and determine what communication strategy will enhance overall organizational performance and effectiveness.

The results in this study were submitted to a peer review Journal and have been published. Hence, the study has contributed to the body of knowledge. Lastly, the study will be useful to contemporary organizations and their top management executives to establish ways to enhance internal communication taking into consideration the diverse perspectives of employees.

This study examines the effects of effective communication on organizational performance in Nigeria adopting the Nigerian Geological and Survey Agency, FCT, Abuja as case study. In this study, the dependent variable shall be organizational performance, while the independent variable shall be effective communication. This study tackled effective communication and contemporary research on its link to organizational performance. The communication practices focus on communication between management and employees. The link between performance and the role communication plays in enhancing organizational performance is positively significant

### **1.8 Justification of the Study**

This study was carried out to reverse the ugly trend of poor communication in organizations. There is the need to enhance better relationship between managers and their subordinates, to avoid unnecessary conflicts and rivalry among organizational members. The importance of effective communications in today's organizations cannot be overemphasized. It engenders employee commitment and full engagement to the organization's goals

and objectives where it is effectively and efficiently implemented. It is with this backdrop in mind that the researcher carried out this study.

## **2.0 Literature Review**

This section reviews related literature in the subject area of study. It is sub-divided into four major sections. The first section incorporates the conceptual framework which reviewed the basic concepts as used in the study. The second section dealt with the theoretical framework, which discusses the theories that underpins or anchored the study. The third section is based on the review of related empirical studies, while the fourth section focuses on the summary of reviewed literature.

### **2.1 Conceptual Framework**

Understanding the effects of communication on organizational performance using the systems theory is the major focus of this study and so this chapter explores the literature that has significance to the objectives and research questions outlined in Chapter One. It will explain the systems theory and its relation to communication, give major findings and gaps between related works and give a summary to the chapter. This section discusses the relevant conceptual constructs of this study.

#### **2.1.1 Nature and Functions of Communication**

Communication according to literature has many definitions that have gained a specific function of management theory and practice. Greenberg and Baron (2018) define it as the process by which groups, people, or an organization (sender) transmits information (message) to another person (group or organization).

Communication according to Soola (2010) is the process by which any person or a group share and impacts information with/to another person (or group) so that both people (and groups) clearly understood one another.

To this paper, communication would be the process by which groups, people, or an organization (sender) transmits information ((message) to another person/group or organization. It is important to then state what is meant by organization in this research. An organization is a body of individuals working under a defined system of rules, assignment, procedures, and relationships designed to achieve identifiable objectives and goals ((Greenwald, 2019)

Interactions are very central to all human activities. All interaction with other human beings is a result of communication. Communication is the key around which human life revolves. The fact that every man is born with the Ability to communicate from childhood, we say that it is innate. Organizational communication can

thus be defined as a social-collectives in which people develop ritualized pattern of interaction in an attempt to coordinate their activities and efforts in the ongoing accomplishment of personal and group goals.

Communication barriers can pop-up at every stage of the communication process (which consists of sender, message, channel, receiver, feedback, and context) and have the potential to create misunderstanding and confusion (Mumba, 2019). To be an effective communicator and to get your point across without misunderstanding and confusion, your goal should be to lessen the frequency of these barriers at each stage of this process with clear, concise. Accurate, well-planned communications (Fowler & Manketelow, 2015). Communication, the heart of business, is the most important of all entrepreneurial skills. An organization's ability to transmit information helps both clients and employees feel they can communicate with and ultimately trust you (Charles, 2018).

Communication is more important today than in previous years partly because the business and market conditions are more complex. There is a lot of information in the marketplace and it's crucial that employees understand it. The development of a strategic communication strategy and its implementation can provide a number of benefits to organizations, such as keeping employees motivated and engaged, and sharing clear, consistent messages with employees in a timely manner. Personal relationship is what organizations are all about. An organization, whatever its size, mission, or motive is merely a collection of people assembled to pursue a common objective. An organization works through its people, who in turn function through communication (Phelps, 2010). Employees have their own sources, their own information system, separate from the management channels. These typically carry the news ahead of communication from management. Not that the employee network is flawless, that system transmits information indiscriminately. It may not always operate in the best interest of the organization, but it does provide a checkpoint for management. Furthermore, it enables employees to participate in the communication process, and it fills their need for information which at least seems to come from a credible source (Richard and McCroskey, 2019).

Employees have various channels that they use to express themselves, their thoughts or feelings. These can be meetings with fellow employees, union representatives, government agents, or through passive aggressive behavior such as work slowdowns, carelessness, tardiness, absenteeism are unavailable to them.

There are many avenues through which management can send messages downward through a business organization, but there are few avenues for movement of information in the upward direction (Nichols & Stevens, 2019). Skilled communications can hold support with co-workers and associates, which can help move projects along more efficiently. They know whose expertise to tap when they need assistance and are adept at resolving conflicts and building consensus among team members (USA Today, 2012). One's effectiveness in

employing the attributes of leadership and the strengths of a company is enhanced by one's aptitude for communication. When leaders and managers are better understood and appreciated, they are followed and supported (Daedalus, 2016).

### **2.1.2 Effective Communication Within An Organization**

Heron (1942) as cited in Dumebi (2021) identified certain elements necessary for effective communication. His work outlined goals, attitudes and criteria for effective communication. Credit is attributed to him for outlining two-way communication literature. He posited that "communication is a line function, a two-way sharing of information. This demands the freedom and opportunity to ask questions, get answers, and exchange ideas". However, Pigor(1949) as cited in Dumebi (2021) pointed out that effective communication can only be possible if management and employee collaborate and work together. The findings of his study demonstrated that employees were significantly important to the success of internal communication and internal communication played a great positive role in shaping or molding employees' performance within the organization. Increased globalization and the ushering in of new Information Communication Technology, has made the working environment grow and became more complex which has increased rivalry amongst organizations. It thus became imperative to research new ways of establishing the role and importance of employee communication to preserve organizational dynamism. The vision and mission of an organization defines its essence of existence and differentiates it from others. To achieve this, communication is a prerequisite and the result of effective communication is realized when the intended action is achieved by first the mind over the others and communication is demonstrated orally, through gestures or even silence.

The responsibilities of each organization's employees are formalized by incorporating them into documents such as employee handbooks. Effective communication can encourage employees to improve their work environment through positive contributions. The ability to communicate effectively enables people to maintain personal relationships (Mumba, 2019).

The main objective of communication in an organization is to make it more effective and is the invisible string that ties it together as one unit. There is greater achievement when people work together than when they work as individuals/Appropriate and clear messages must be formulated and then the right medium used to communicate within an organization. In organizational communication, the source of the message must be sensitive to the different audience characteristics.

A crucial stage in organizational communication is the choice of the right source of the message that is intended for delivery. Changing sources of information in an organization reduces credibility of the source. Message recipients usually look at the person who has signed the letter and this affects their perception. Any message

intended for release in an organization must be made by the most credible source within its hierarchy. The channel or route identified to deliver the message must be consistent with the intended results. Different channels have unique characteristics for delivery of message.

A multi-prolonged application of the channels identified for message delivery is advisable. The following objectives should be kept in mind while reviewing and revising your current approach to communicating with employees: provide accurate information about factors that affects their work quality; clarify the responsibilities of each party; establish an effective system for logging and responding to complaints should they occur and provide accurate information. Many indoor problems can be prevented if staff and management understand how their activities affect the organizational performance/ Every organized society needs communication to give life to the organizational structure. Bernard (2022), realizes that communication should occupy a central place because the structure is almost entirely determined by communication technique.” Thus, Bernard also stressed that the first executive function of the management is to develop and maintain a system of communication.

Several authors all agree that communication serves the following four functions within an organization, or society and that it is the very essence of a social system of an organization (Farmer, Slater and Wright, 2018). An organization as a stable system of individuals who work together to achieve, through a hierarchy of ranks and divisions of labor, and organizational goals. To do this, the individuals requires information to enable them to make appropriate decisions. Therefore, enough information must be availed to them to dismantle their individuality. The behavior of people in organizations has a different set of determinants than outside organizational roles. Most of these distinctive determinants are variables that involve the organizational structure. Since the organizational communication occurs in a highly-structured context, the organizational structure tends to affect the communication process.

Hence, communication from a subordinate to a superior is very different from communication between equals (Katz and Kahn, 2018). In an open system perspective, an organization is seen as an elaborate set of interconnected communication channels designed to impart, sort and analyze information from the environment and export the processed message back to the environment. “Communication provides a means for making and executing decisions, obtaining feedback and connecting organizational objectives and procedures as the situation demands” (Rogers and Rogers, 2016). Communication is not only an essential ingredient in the internal functioning of an organization, but it is also vital in the organization’s information exchange with the environment. An organization is often taken for granted. There is an assumption that if an individual can speak, read and write, then he can communicate. Communication is not just reading, writing, and speaking, rather it is the transfer of information and understanding from one person to another, (Waveru, 2022).

The importance of communication research as seen by Deutch (1952, as cited in Okamgba (2020), rests in understanding the requisite pathways by which communication is communicated between different parts of an organization. Further, the research has enabled scholars to determine how communication is applied to the behavior of the organization relation to the outside world and we will have gone far towards understanding that organization. The gist of studying communication in an organization lies in recognizing it as a process by which an idea is transferred from a source to a receiver with the intention of changing his/her behavior. Communication relates with an organization in that different individuals work together to achieve common goals and objectives. This can only happen in an environment where free flow of information persists.

Webber (1970) as cited in Ojukwu (2018) has shown that supervisors perceive that they communicate more with their subordinates than their subordinates perceive they do. Likewise, the subordinates perceive that they send more messages to their supervisors than their supervisors perceive they do. Webber's finding indicates that both parties perceive that the other fails to keep them adequately informed. That breakdown in communication results from perceptual differences between both supervisors and subordinates.

### **2.1.3 Organizational Performance**

According to Richard et al. (2019) organizational performance encompasses three specific areas of firm outcomes; financial performance (profits, return on assets, return on investment); product market performance (sales, market share) and shareholder return (total shareholder return, economic value-added). Ricardo (2001) argued that performance measures could include result-oriented behavior, criterion-based and relative normative measures, education and training, concepts and instruments, including management development and leadership training, which were the necessary building skills and attitudes of performance management.

Some researchers, such as Thompson (1967, cited in Olayemi, 2023) and Friedlander and Pickle, cited in Ikwuegbu, 2021) consider performance as a theme that repeatedly occurs in paradigms of management. Performance is one of the most argued concepts among various researchers and theorists. In the absence of any operational definition of performance upon which most of the relevant scholars agree, there would naturally be different interpretations and inferences opined by various people according to their own perceptions. This discord and lack of agreement is partly due to the lack of a significant attempt to theoretically or practical account for and definition for the concept. As a result, a commonly accepted definition of the concept faces various problems, which means that the possibility of any definitions and deriving some norms to arrive at the desired definition is still questionable.



Organizations perform various activities to accomplish their organizational objectives. It is these repeatable activities that utilizes processes for the organization to be successful that must be quantified to ascertain the level of performance and for management to make informed decisions on where, if needed, within the processes to initiate actions to improve performance (Farmer, Slater, and Wright, 2018). Therefore, it can be claimed that there is a close relationship between the organizational objective and the concept of organizational performance (Ricardo, 2021). Therefore, all companies probably attempt to achieve certain pre-determined objectives with the help of available resources. Hence, the two aspects of the concept, i.e. the organizational objective, and the organizational inputs or resources can be considered in the definition of organizational performance.

Strategic and operations management are also included in performance, a feature that attracts the interest of both practicing managers and academic scholars. Performance, therefore, can be defined as the evaluation of the constituents that try to assess the capability and ability of a company in achieving the constituents' aspiration levels using efficiency, effectiveness, or social reverent criteria ((Thompson, 2019).

According to Katz and Khan (2017), effectiveness refers to the maximum extent production functions are able to fulfil and meet the demands and requirements of the customer. Efficiency, on the other hand, is assessing and evaluating how the resources of an organization are economically utilized through the accomplishment of functions to achieve its objectives. Quantitatively, performance and the dimension of scale are interrelated, i.e., it is generally quantifiable in different dimensions. As an example, the performance level can be expressed as a percentage or an absolute value in a way that makes it easy to understand for directors.

According to Mcleod et al. (2017), the quantitative expression of performance targets is the only way to render them meaningful. Furthermore, performance refers to the nature and quality is an an action performed in a company to achieve the accomplishment in its primary functions and tasks to produce profit. Communication is an integral component of any performance improvement approach. Organizations eager to accomplish strategic goals establish well-defined communication strategies. A well-defined strategy is one that engages employees and aligns with the organization's business goals. Hence, from the above literature review, the term 'performance' should be broader-based which include effectiveness, efficiency, economy, quality, consistency behavior and normative measures (Ricardo, 2011). Communication strategies, systems, and practices do play a central role in high-performance. A thoughtful and comprehensive communication strategy is a vital component to any successful change and improvement. The communication strategy sets the tone and direction of improvement efforts. Effective strategy links to organizational goals. Aligned strategies tends to enhance organizational performance. Strong communications keep everyone focused on goals and priorities while providing feedback on progress.

Effective communication strategies, systems, and practices have a huge and direct effect on organization learning and innovation. Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). According to Richard et al (2019), organizational performance encompasses three specific areas of firm outcomes: a) financial performance (profit, return on assets, return on investments, etc.); (b) product market performance (sales, market share, etc.); (c) shareholder return (shareholder return, economic value-added, etc.). The term organizational effectiveness is broader. Specialists in many fields are concerned with organizational performance including Strategic Planners, Operations, Finance, Legal, and Organizational Development.

In recent years, many organizations have attempted to manage organizational performance using the balanced scorecard methodology where performance is treated and measured in multiple dimensions such as: Financial Performance, Customer service, Social Responsibility (e.g. corporate citizenship, community outreach) and Employee stewardship;

#### **2.1.4 Organizational Performance and Effective Communication**

Communication has been characterized as the “Life blood” of an organization and miscommunication has caused the equivalent of heart damage in more than one organization (Salako, 2016). According to Bateman and Snell (2022), some managers believed they should choose only one channel to communicate a message because doing so is more efficient but multiple channels may be necessary for example with virtual terms, relying solely on e-mail is not enough. Managers should also employ audio meetings, video conferencing, voice mail and face-to-face communication/It is helpful for all team members to be available by phone during certain hours. You should hold regular face-to-face meetings and ensure attendance at scheduled virtually meetings. Regular update status and two-way exchanges are necessary via multiple channels. Another key to communication effectiveness is that people know how to use various channels properly for example virtual teams should be trained on how to use software to enhance team performance. How to use (and not use) e-mail typography to communicate emotions and such norms to acknowledging receipt of messages and speed of response.

It is broadly recognized that effective communication also results in a number of positive outcomes for managers. These include increased productivity reduced absenteeism and greater commitment to organizational goals (Clampit and Downs, 2013). In turn, communication practices that succeed in maintaining an informed and empowered workforce offer many benefits to staff such as improved morale and better working relationships. Despite positively contributing to organizational performance, communication problems will always exist and the issue comes in on how best to mitigate these issues. As Buchanan & Huczynski (2014)

assert, that the factors affecting communication are wide-ranging and often depend on multiple variables. One of the most important features of the communication flows that operate in organizations are those that regulate interactions between supervisors and subordinates. Superiors are expected to provide resource and direction, subordinates complete their tasks and contribute to the organization, but this interaction does not often match the ideal while on the other hand leaders complain of a power struggle between them and subordinates. If not properly handled this is likely to affect organizational performance.

### **2.1.5 Channels of Communication**

Communication channel is defined as a technical term that allows us to transfer information from the sender to the receiver and vice-versa (Reinsch and Lewis, 2014). This includes all the various means in creation and acceptance of a message. This can be signs, codes or technical devices. A channel is a means of communication that an organization can use or decide to totally ignore Boczkowsky and Orlikowski, 2014. One channel can be used in a particular situation and not used in another situation. Also, certain channels may be used separately and others may tend to be combined. Today, businesses rarely use a single channel of communication. Studies show that two or more channels are frequently used sequentially or simultaneously ((Dennis, Fuller and Valacich, 2018).

Informal channel of communication is an official chain of command which follow in any direction. It grows out of social interactions from people who work together. This can be used when there are gaps in or barriers to formal communication which disturb the employees from getting the information they require or desire. Common sources are rumor (an unofficial channel which transmits unreliable information), grapevine (it carries more reliable and valuable information). I can be single strand, gossip or cluster). When there are existing gaps in communication, conflict between those in charge of distributing information and those in charge of receiving it arise. A study by Mumba and Phiri (2019), discovered that poor leadership skills from management, employees not being satisfied with the communication procedures in their workplace can cause conflict and demoralization.

### **2.1.6 Forms of Communication**

There are three different forms of communication. Written Communication, Oral Communication and Non-Verbal communication. To begin with, written communication basically involves the use of emails, letters, memos, procedures, policy, manuals, notices, books, to transmit information in an organization. Any form of communication which is written and documented from the sender is known as written communication

(Boczkowsky and Orlikowski, 2014). Examples of written communication include letters, memos, research papers, reports, etc. It is a very concrete form of documentary evidence and can also be used for future reference purposes. As the information is written, it can easily be distributed to many people thus making it a bulk communication method. As the information does not change from person to person, the accuracy of the information conveyed is same across the entire audience.

To ensure an effective written communication form, it is a must to follow completeness, clarity, and correctness in your writing (Mamoria, 2017). As there is no immediate feedback that can be received, it is important that written communication is detailed and accurate to ensure that the right message is communicated. Some of the limitations are lack of feedback and absence of modulations to convey message effectively. These can be overcome effectively by mixing omesral communication with written to combine the advantages of both along with eliminating the written document, the receiver can read it repeatedly until he/she understands the entire message. In addition, Written communication is also suitable when immediate interaction with the audience is either unimportant or undesirable.

Secondly, Oral communication: this is the transfer of information from sender to receiver by means of verbal and visual aid. Examples of oral communication include presentations, speeches, discussions, etc. Though the message is conveyed through words, most of the times oral communication is effectively carried out with the help of non-verbal communication like body language (Robbin, 2018). There are many benefits of oral communication. This form of communication is a quick and direct method of communication. Whether positive or negative, it helps to convey the message immediately to the receiver. This method of communication enables in obtaining immediate feedback and hence is a form in which two-way communication can be enabled. The other main advantage of this communication method is that it conveys the message with the desired pitch and tone that is needed for the message. It also saves time in a huge way and save enormously on effort that is spent.

Oral communication is a less formal method as compared to others and hence add a personal touch to your message (Moorhead and Griffin, 2019). Though it has many advantages, oral communication has its set of limitations also. This form of communication can be misunderstood very easily. Communicating through oral forms require high skills and not something everyone can master. It is also not a form of communication that can be used as a form of documentary evidence. Oral communication is more effective when it is needed to communicate with someone instantly. When giving detailed explanation of policies, managers of the company require explanation and oral communication to establish a direct relationship between sender and receiver or between workers and management.

Thirdly, there is Non-Verbal Communication, i.e. messages that are expressed without the use of words. This is basically through using facial expressions, body movement and personal appearance to pass information. Important categories are Kinetic behavior, physical distance, Oculesis, Chronemics, Haptics, Paralanguage and Paralinguistics (Robbin, 2019).

### **2.1.7 Barriers to Effective Communication**

Communication means sharing information among different parties. For one to communicate successfully in a team or with others, at home, school, work or in the community, we must understand the different communication environments and the various barriers which prevent messages from being sent and received successfully. A communication barrier is anything that prevents us from receiving and understanding the messages others use to convey their information, ideas, and thoughts (Dr. Rani, 2016). There are different barriers to effective communication. Empathy is important for overcoming barriers to communication based on culture. Language barriers occur when people do not speak the same language or do not have the same level of ability in a language. There are many environmental factors affecting the effective communication process. Four types of barriers are process barriers, physical barriers, semantic barriers, and psychosocial barriers (Eisenberg, 2010).

#### **2.7.1a Environmental and Physical Barriers**

Messages can be blocked by environmental factors, such as the physical setting or the situation where communication takes place. A suitable choice of media can be overcome by distance barriers between people. Any number of physical distractions can interfere with the effectiveness of communication, including a telephone call, drop-in-visitors, distances between people, walls, and static on the radio. People often take physical barriers for granted, but sometimes they can be removed. The ability to communicate effectively enables people to maintain relationships (Munba, 2019). Within an organizational structure, it is vital to have team-spirit and individuals should work in coordination with each other and be cooperative towards each other. Formal and informal means of communication occurs within an organization. One of the crucial factors is proximity within an organizational structure. There is a system of hierarchy and those individuals who are placed at the higher levels of the hierarchy have closed doors, offices and cabins and are physically placed at the distance, their subordinates are in this way unable to communicate with them and this is a physical barrier to effective communications. Other examples include Time, space, place and medium used.

### 2.1.7b Psychosocial Barriers

Three important concepts are associated with psychological and social barriers: fields of experience, filtering, and psychological distance (Antos, 2011).

Fields of experience include people's backgrounds, pe, needs, perceptions, values, biases, needs, and expectations. Senders can encode and receivers decode messages only in the context of their fields of experience. The behaviors like bias, generalizations and stereotyping can cause communication barriers. This can cost an entire organization time and money. Stereotyping occurs when you assume, we know something about a person because of their cultural or social background (Pikering, 2015), Our views may come from a bias you may have against a behavior, appearance, possession or even a geographical area. Our situation, appearance and behavior may contribute to other people's stereotyped views. This could contribute to communication breakdown. When the sender's field of experience overlaps very little with the receiver's, communication becomes difficult. Filtering means that often we see and hear what we are emotionally tuned in to see and hear. Filtering is caused by our own needs and interests, which guide our listening.

### 2.1.7c Language Barriers

Language is the means which is said to be the most effective means of communication with others. The language provides understanding of the content that an individual is willing to express or communicate with the others. When two persons or groups of people are involved in communicating with each other and if a common language is used that is understandable to all individuals then their objectives will be fulfilled, and the process of communication will be made effective. Usually, barriers often go hand-in-hand with cultural differences, posing additional problems and misunderstandings in the workplace (Morris, 2022). Thus, language barriers can easily give impact in the work performance because messages can easily be misconstrued. Language barriers occur when people do not speak the same language, or do not have the same level of ability in a language. However, barriers van also occur when people are speaking the same language. Sometimes barriers occur when we use inappropriate levels of language or we use jargons or slang which is not understood by one or more of the people communicating. Often the situation in which the conversation is taking place, and whether people have prior experience of the matter being discussed, can also contribute to such barriers being formed. Within an organization, it is vital to develop a common language to communicate appropriately.



### **2.1.7d Cultural Barriers**

Within an organization, individuals belonging to different nationalities, regions, cultures, religions, castes, creed and different status groups are employed together. These people at times do familiarize themselves with other people's cultures and backgrounds, whereas other times they are even unaware (Matic, 2018). Communication with people of different cultures and backgrounds means sensing the feelings and attitudes of others as if we had experienced them personally. A cultural barrier occurs when people of different cultures are unable to communicate with each other efficiently and this inability may be due to diverse factors such as different backgrounds, languages, customs, viewpoints, ideas, notions and so forth.

### **2.1.7e Attitudinal Barriers**

A common cause of communication breakdown in a workplace situation is people holding different attitudes, values, and discrimination. An example of this is differing perceptions people have of power and status. When it comes to attitudinal barriers, looking at them as those behaviors or perception that are divisive in nature, sullen disagreement or even overt conflict is a better understanding. They all interfere with and undermine communication. According to Dr. Rani (2016), no matter where attitudinal barriers may lead, most people's attitudes are influenced by some common variables. These variables include: Age, Culture, Education, Experience, Gender, Lifestyle (especially socio-economic status), Race, and Upbringing. Some people may think that they should treat people or be treated differently based on what they perceive as their status or power within a workplace or in the community. If they think that managers and supervisors have power over staff, for example, that they can allocate duties, reward, promote.

### **2.1.8 Overcoming the Barriers to Effective Communication**

The desire of all managers is to minimize as much as possible barriers to communication. The flow of communication among the various levels is top to bottom (downward communication) as well as from the bottom to top (upward communication). To overcome barriers to effective communication, several opinions are suggested by Hambagda (2020), Hybels and Weaver (2021). Firstly, they discourage information overload. Messages should be transmitted in the quantity the recipient can decode and interpret.

Secondly, they state that messages should always be communicated quickly, because delays cost money. Thirdly, an appropriate channel is a function of the nature of the message to be transmitted. Lastly, Communication is considered complete when feedback is given to a message. This should be encouraged as a way of confirming how successful the communication was.

## 2.2 Theoretical Framework

Several theories abound to serve as platform for the explanation of the nature, processes, manifestations and variables of communication. However, the theory that anchor or underpin this study is the Systems theory. The researcher is underpinning the research on the systems theory which was developed in the 1950s with the need to have a set of systematical theoretical constructs to discuss the empirical world (Boulding, 1956, von Bertalanfy, 1951 as cited in Chinyere et al., 2022). The argument by von Bertalanfy was that everything is interconnected. This showed a different point of view from traditional scholars that looked at individual components. Another origin of systems theory came from cybernetics systems theory in mechanical engineering (Ashby, 1954, Wiener, 1948 as cited in Johnson et al., 2021). The term cybernetics refers to control and communication in the machine system (Almaney, 1974, as cited in Okeoma, 2019). Similar to systems theory, the concepts of cybernetic systems theory were found useful in explaining the behaviors of social systems extended from machine systems.

Because of origins from multiple disciplines, systems theory are meant to be applicable to organisms and human behaviors of different disciplines (Kast & Rosenzweig, 1972, as cited in Mgbemere, 2017). When applied to communication, the systems theory is meant to understand the interconnectedness of the human communication and not just focus on one aspect of it (Scott, 1974, as cited in Okenla, 2023). One area that make great use of this theory is organizational communication. Because naturally, people create organizations that use communication in order to function on a daily basis. The strength of looking at effective communication from the systems perspectives is that each and every form of communication will always impact on entire system as a whole. When one part of an organization is changed, another part is somehow affected (Ashmos & Huber, 2017). In general, systems theory focuses on three levels of observations: the environment, the social organization as a system, and human participants within the organization. The biological notions of population change and individuals' interaction with the environment can apply to human organization.

According to systems theory, components of each system are structured in a hierarchical ordering, and components are interdependent with one another in the system to the extent that one component cannot function without the support of other components.

At the organizational level, the organization and other organizations in the environment are also interdependent on one another. Underlying this interdependence are the pervious boundaries, both inside and among organizations. The process of receiving resources (input) and exporting products (output) is the exchange process. When the raw materials are received, components of a system will work together to transform the

materials into products exported to the environment. During this throughput process, the system is engaged in two types of feedback mechanisms: negative and positive.

Negative feedback is to correct errors to maintain the current state of the system whereas positive feedback is to change the system through improvement or growth. In reaction to the change in the environment a system develops the capacity to become complicated as the conditions of the environment become complex (Schneider & Somers, 2016).

Systems theory highlights the importance of communication processes in organizations. Rajhans (2022) in a study “effective organizational communication: a key to employee motivation and performance” said that organizational communication plays a vital role in employee motivation and performance as real changes are taking place in modern organizations which confront the new reality of tighter staffing, increased workloads, longer hours and a greater emphasis on performance, risk-taking and flexibility.

### 2.3 Related Empirical Studies

Several scholars’ works and studies abound on the subject matter of effective communication and organizational performance. It is of interest to us here to discuss these related empirical studies with a view to aligning them to this present study.

Neto et al (2018) conducted a study in a soft drinks industry of 518 employees in Metropolitan region of Belo Horizonte that tried to examine the influence of internal communication with the constructs trust and organizational identification in the performance of an organization. The survey was quantitative and performed with 310 respondents using a questionnaire organized in groups of issues; Internal communication, Trust in Co-workers, Trust in managers, Organizational identity and Performance. The study revealed that the higher the organizational identity the greater the trust in the manager and the performance. It also discovered that Internal communication does not support performance, however, the indirect effect on performance is positive.

Research conducted by Mazzei (2014) examined how communication strategies can enhance productivity and sustain competitive advantages. In this qualitative study, interviews were conducted and focus group discussions with internal communication experts in 10 American companies and 22 Italian companies. The study addressed two main questions: firstly, the relevance of the communication actions of employees and managers and secondly internal communication strategies that are put in place to help employees and management implement internal communicative actions. It was discovered that in American companies’ communication actions are mostly linked to the implementation of company strategies while Italian companies use it as a source of competitive advantage. Mazzei (2014) suggests that there is a wide variety of employee and

manager communication actions such as exploring, interpreting, sharing, and acting. The findings suggested that a key factor for effective enablement is mutuality which links to loyalty. Finally, the interviewees stated that managerial communication is the most important between the company strategy and communicative actions.

A study to examine the significant impacts of effective communication towards the performance of the construction organization was carried out by Mohammed Isah, Leje et al (2019). The objectives of the study include to identify impacts of effective communication and evaluate the degree of agreement to which effective communication influence construction organization from construction contractors and consultants' viewpoint. A sample of 200 construction contractors and consultants were randomly selected from the Bureau of Public Procurement (BPP) database, out of which the responses rate received were 160 (80%). Data analysis include Relative Importance Index (RII) for ranking comparison among the construction professionals. Kendall's coefficient of concordance was used to evaluate the degree of agreement between construction professionals related in the ranking of each group of the practices.

The results of RII revealed that improved productivity in the organization reduce project delay, better safety precautions on construction sites, better use of materials and equipment and improve professional commitment to the organization are the top impacts of effective communication toward the performance of construction organization. The results of Kendall's coefficient of concordance revealed a high agreement between construction professionals occurred in the ranking of the impacts of effective communication towards the performance of the construction organization. The findings revealed that effective communication helps to facilitate better understanding among all parties in the construction organization.

In a study on the effects of organizational communication and culture on employees' motivation and its impact on employee performance carried out by Gautama et al (2018), the conclusions were that: organizational communication significantly influenced employee motivation in broadcasting companies i.e. by increasing effective communication within the organization, companies will increase employee motivation as well. Organizational culture has no significant effect on organizational performance. Evidently, by increasing effective communication within the organization, companies will increase employee performance as well.

Culture has no significant influence on employee performance; and employee motivation significantly influenced employee performance i.e. by increasing employee motivation within the organization, companies will improve employee performance. Another study carried out by Onifade A. Temitayo et al(2018), looked at Communication: an effective tool for employee performance in Unilever Nigeria PLC. The study aim was to determine the relationship between effective communication and employee performance. Descriptive survey

research design was adopted for the study and the total population of the study were 142 respondents. The simple random sampling technique was used to select the participants. Data gathered were analyzed using Pearson Product Moment Correlation (PPMC). The result of the analysis revealed that there was a significant relationship between effective communication and employee performance. It was therefore concluded that organizations should endeavor to make effective communication an essential strategy in achieving high employee performance.

The research project by Kube (2014) main objective was to investigate the effects of communication strategies on organizational performance in Kenya Ports Authority. It also sought to find out how open-door policy of communication influences organizational performance, to assess how group effort enhances organizational performance, to analyze how organizational structure can improve organizational performance and to identify the roles of formal communication channels on organizational performance to be effective, the communication should be an open communication environment, is one in which all members of the organization feel free to share feedback, ideas and even criticism at every level. Inclusive is one in which explicit steps are taken to decisions that affect their day-to-day work. Organizations with a secretive communication environment shut people out, which can stifle involvement and result in lost ideas and opportunities. Communicating different messages require different methods and busy business environments can mean that messages get lost. Using multiple channels to communicate with various audiences will increase the odds that communication is received and understood. Organizations should try to incorporate effective communication strategies that will help enhance the organizational performance. The relevance of this study is that it addresses the need for effective communication within organizations in order to achieve high performance. Lack of effective communication causes a loss in business opportunities.

## 2.4 Summary of Reviewed Literature and Gap in Knowledge

From the works reviewed, the opinion of the researcher and other scholars on the subject of effective communication and organizational performance agrees. From the discussions, most studies have focused on the importance of effective communication and its barriers, but they have not advised on what framework can be used to enhance effective communication in organizations. This study seeks to fill this research gap.

## 3.0 Methodology

The researcher in this section examined the issues concerning research design, population, sample and sampling technique that will be used for this work. The researcher also examined the instrument in collecting data, the

validity of the instrument, reliability of the instrument, procedure for data collection, method of data analysis, and limitations of the study. The design for this study is a descriptive survey method. It is used to describe what is existing and to answer the research questions stated by the researcher for the study. The population of this study comprised of selected staff at the Nigerian Geological and Survey Agency, Abuja, FCT., totaling 1,200. The population is made up of 800 males and 400 female employees.

Simple random technique was adopted for this study. In order to achieve a sample size that is representative of the total population, the researcher adopted a 10% of the total population totaling one hundred and twenty (120) employees at the Nigerian Geological and Survey Agency, FCT., Abuja for the study. One research instrument was used for this study which was Questionnaire and it is titled: The Effects of Effective Communication on Organizational Performance: A Case Study of Nigerian Geological and Survey Agency, FCT, Abuja) was used to collect data for this study by the researcher. The reason for using questionnaire was based on the following advantages.

Firstly, it can give objective and reliable information of it is carefully and well-constructed. Secondly, it is relatively effective and easier to score and administer. Questionnaire is a good representation of group test and owing to the nature and diversity of the population, questionnaire methods become necessary. The questionnaire is divided into three sections to enable the researcher obtain information from the respondents, the questionnaire will be designed in such a way that it provides the following sections: (A)the respondents' personal data, section (B) the respondents' understanding of effective communication, section (C), the effects of effective communication on organizational performance adopting the Nigerian Geological and Survey Agency, FCT, Abuja.

The five Likert scale 9(strongly agreed, agreed, undecided, disagreed and strongly disagreed) questionnaires will be adopted by the researcher. The Likert scale consists of a list of statement that has relationship with the issue in the question, it does not only allow the respondent to check those statements in which they agree or disagree but allows the respondent to state the degree of agreement or disagreement with every statement (Osuala, 2007). Face and content validity is employed in this study, the researcher employed the help of some senior lecturers from the Faculty of Management Sciences, NOUN. After going through the work, they advised the researcher to see a statistician who will scrutinize the objectives of the study, research questions, research hypotheses as well as the methodology of the study. The draft questionnaire was also presented to the project supervisor for necessary corrections and adjustments before the final copy was printed out for use in the research work.

In order to establish the reliability of the instrument, pilot study was carried out. The essence of pilot study was to test the adequacy and suitability of the instrument in measuring what it is supposed to measure and to



ascertain any difficulty that the researcher may encounter. For the purpose of this, a total of (12) copies of the questionnaire representing 10% of the total population of study were administered to selected staff at the Nigerian Geological and Survey Agency, FCT, Abuja. They were filled under the supervision of the researcher. The filled questionnaires were collected and subjected to statistical analysis in order to determine the reliability co-efficient of the instrument as well as the internal consistency of the items within the instrument.

The data collected from the pilot study was analyzed using Cronbach Alpha techniques and reliability index of 0.85 was obtained. Bennett (2006) testified that for a scale to be considered reliable, it should have an alpha value of 0.50 to 1. With the level of reliability index of 0.85, the instrument was considered reliable for use in the main study.

To administer the validated instrument of the study, an introductory letter was collected from the head of department and presented to the Management of the Nigerian Geological and Survey Agency and other staff that were randomly selected. The research assistants were educated on how to distribute the questionnaires and who is qualified to be given the questionnaire.

The analysis of data for this study was done based on the hypotheses formulated. The researcher used descriptive statistical method for bio-data presentation. Measures of relationship between the variables were being carried out using independent t-test. The simple percentage, mean score and standard deviation was used to answer the research questions.

All hypotheses were tested using the independent t-test at 0.05 alpha level of significance like what is obtainable in other social science. The reason for adopting these statistical tools is to test whether there will exist some significant differences or not and either to retain or reject the null hypotheses.

Conducting effective research in Nigeria is not easy due to the fact that most people are reluctant to release information needed for research study. The researcher devoted enough time and effort in making sure that enough data are gathered to accomplish the research work. There is also the constraint of time as the researcher has to carry out the research work alongside his official duties.

#### **4.0 Data Analysis, Interpretation and Discussion of Results**

This section presents the data collected, the analysis carried out and the discussion of the results obtained. The analysis is presented in sections. The first section presents the frequency and percentage distribution of bio data respondents and nominal questions as responded by respondents. The second section presents the answers to the research questions using descriptive parameters of mean scores and standard deviation. The third section presents the testing and interpretation of the two null hypotheses using parametric statistical techniques of

independent t-test. All hypotheses were tested at 0.05 alpha level of significance. The major findings are then revealed before the discussions of the major findings.

#### 4.1 Data Analysis and Interpretation

##### 4.1.1 Analysis of Demographic Information

Descriptive statistics was used to analyze the demographic information of the respondents, these included the use of frequency and percentage.

**Table 4.1.1: Bio-Data of Respondents**

S/No.	Bio-data	Category	Frequency	Percentage (%)
1.	Status	Top Management	30	25.0
		Middle Managers	20	16.7
		Line Managers/Others	70	58.3
2.	Gender	Male	70	58.3
		Female	50	41.7
5.	Qualifications	M.Sc./M.Ed/MA/MBA	30	25.0
		B.Sc/B.Ed	40	33.3
		NCE/OND	50	41.7
4.	Years of experience	0- 5 years	60	50.0
		6 - 10years	25	12.5
		11 - 15 years	35	37.5

On the status of the respondents, 30 representing 25% were market top management staff, 20 representing 16.7% were middle-level managers while 70 representing (58.3%) were Line Managers and other staff. Table 4.1.1 above showed that 70 representing (58.3%) were males and 50 representing (41.7%) were females. According to Table 4.1.1, 25 representing 30% had M.Sc/M.Ed/MA/MBA degree, 40 representing (33.3%) possess B.Sc/B.Ed degree while 50 representing (41.7%) had NCE/OND. On the respondents' working experience, from the table above showed that 60 persons representing (50%) had worked between 0 – 5 years, 25 persons representing (12.5%) had worked between 6-10 years, while 35 persons representing (37.5%) had worked between 11 – 15 years respectively.

### 4.1.2 Answering of Research Questions

This section presents the result of this study based on the data analysis. They were presented on the basis of the five research questions and two null hypotheses that guided the study. The researcher used 3.00 as the mean otherwise known as decision mean since the instrument was structured along a modified five Likert scale structure to take decision on whether to accept or reject the research questions after comparing it with the qualitative mean. Therefore, a mean score of 3.00 and above indicate positive response to the research question and accepted while a mean score below 3.00 indicate negative answer to the research question and rejected.

This is shown below:

- SA - 5 points
- A - 4 points
- UD - 3 points
- SD - 2 points
- D - 1 point

$$\frac{5 + 4 + 3 + 2 + 1}{5} = \frac{15}{5} = 3.00 \text{ (Decision Mean)}$$

#### Research Question One:

What are the factors affecting effective communication at the Nigerian Geological and Survey Agency, Abuja, FCT?

The data for providing answers to the above research question is presented on Table 4.1.2 below:

**Table 4.1.2: Mean and Standard Deviation Ratings of the factors affecting effective communication at the Nigeria Geological and Survey Agency, Abuja.**

S/No.	Questionnaire Items	Mean	SD	Decision
1.	The organization clearly communicates relevant information to all employees on time	4.22	1.05	Agreed
2.	The organization provide prompt feedback to the employees	3.99	0.97	Agreed
3.	Communication within the organization contribute to organizational performance	3.78	1.05	Agreed
4.	My most important communication need is efficient feedback	3.91	1.01	Agreed
<b>Cluster</b>		3.85	1.03	Agreed

The respondents in Table 4.1.2 on the extent to which effective communication influences organizational performance at the Nigerian Geological and Survey Agency, Abuja FCT, Nigeria accepted that effective communication is crucial to improve organizational performance. The variation of opinions of respondents symbolized by the mean ratings ranges between 3.99 and 4.22 while the standard deviation (SD) ranges between 0.97 and 1.05 respectively.

### Research Question Two:

What are the practices of communication and organizational performance at the Nigerian Geological and Survey Agency, Abuja, FCT?

The data for providing answers to the above research question is provided in Table 4.1.3 below:

**Table 4.1.3: Mean and Standard Deviation Ratings of the Practices of Communication and Organizational Performance at the Nigerian Geological and Survey Agency, Abuja FCT?**

S/No.	Questionnaire Items	Mean	SD	Decision
5.	The main barrier to effective communication is manager's poor perception of employee	4.21	1.08	Agreed
6.	To enhance effective communication, it is recommended that managers encourage prompt feedback	4.22	1.10	Agreed
7.	Face-to-face channel of communication is mostly commonly utilized by supervisors	4.20	1.09	Agreed
8.	Telephone, meetings, letters and memos may be used to communicate with your co-workers	4.25	1.07	Agreed
<b>Cluster</b>		4.22	1.08	Agreed

The respondents in Table 4.1.3 agreed that that the practices of communication has a significant positive effect on organizational performance at the Nigerian Geological and Survey Agency, Abuja FCT. This acceptance was symbolized by the above mean score ratings ranging between 4.20 and 4.25 and the standard deviation ranging between 1.07 and 1.10 respectively.

### Research Question Three:

What is the relationship between directions of communication and organizational performance at the Nigerian Geological and Survey Agency, Abuja FCT?

**Table 4.1.4: Mean Ratings and Standard Deviation of the relationship between Directions of Communication and Organizational Performance at the Nigerian Geological and Survey Agency, Abuja FCT.**

S/No.	Questionnaire Items	Mean	SD	Decision
9.	Letters and memos are the best means of communicating feedback in my organization	4.01	0.92	Agreed
10.	You receive clear, accurate and prompt information on what the organization expects of you	3.99	0.95	Agreed
11.	You are kept informed on matters that affect their work and the working conditions	3.95	0.91	Agreed
12.	You are given opportunity to voice their suggestions and fears.	3.92	0.90	Agreed
Cluster		3.97	0.93	Agreed

The respondents in Table 4.1.4 accepted that there is a significant positive relationship between directions of communication and organizational performance at the Nigerian Geological and Survey Agency, Abuja FCT. This was symbolized by the mean ratings ranging between 3.92 and 4.01 while the standard deviation (SD) ranges between 0.90 and 0.95 respectively.

#### **Research Question Four:**

What are the employees' opinion about the directions of communication and organizational performance at the Nigerian Geological and Survey Agency, Abuja, FCT?

**Table 4.1.5: Mean and Standard Deviation Ratings of the opinions about the Directions of Communication and Organizational Performance at the Nigerian Geological and Survey Agency, Abuja FCT**

S/No.	Questionnaire Items	Mean	SD	Decision
13.	The organization implements the views and opinions of workers	4.01	1.05	Agreed
14.	Top management say what they mean and do what they say	3.92	1.07	Agreed
15.	The directives that come from top management are clear and consistent	3.90	1.04	Agreed
16.	Most of the information you receive from your manager is detailed and accurate	3.91	1.06	Agreed
Cluster		3.92	1.03	Agreed

Respondents in Table 4.1.5 accepted that there is a significant positive relationship between the opinions of employees concerning the directions of communication and organizational performance at the Nigerian Geological and Survey Agency, FCT, Abuja, FCT. This was symbolized by the mean ratings ranging between 3.91 and 4.01 while the standard deviation (SD) ranges between 1.04 and 1.06 respectively.

**Research Question Five:**

What are the barriers to effective communication and the measures to eradicate it at the Nigerian Geological and Survey Agency, Abuja, FCT?

**Table 4.1.6: Mean and Standard Deviation Ratings of the Barriers to Effective Communication and Measures to Eradicate It at the Nigerian Geological and Survey Agency, Abuja FCT.**

S/No.	Questionnaire Items	Mean	SD	Decision
17.	You receive information from the sources that you prefer, (e.g. from your superiors, department meetings, co-workers, newsletters)	4.00	1.06	Agreed
18.	The information you receive from another department is consistently reliable	3.90	1.10	Agreed
19.	Your job is not delayed because you get the information you need	3.91	1.08	Agreed
20.	People in the organization are encouraged to be open and candid with each other	3.95	1.09	Agreed



Respondents in Table 4.1.6 accepted that there exist barriers to effective communication and suggested measures to mitigate or eradicate it in the Nigerian Geological and Survey Agency, Abuja FCT. This is as symbolized in the mean scores ratings ranging between 3.90 and 4.00 while the standard deviation (SD) ranges between 1.06 and 1.10 respectively.

## 4.2 Test of Hypotheses

The following hypotheses will be tested at 0.05 alpha level of significance.

**Table 4.2: t-test of Hypotheses on Ho1 and Ho3**

S/No	Hypotheses	Category of Resp	N	- N	SD	T-CD	DF	T. T A B	Decision
1.	There is no significant difference between the opinions of male and female respondents at the Nigerian Geological and Survey Agency, Abuja FCT.	Trade -rs	120	4.01	1.15	- 1.62	541	1.96	Accepted
2.	There is no significant difference between the opinions of the Top Management and other staff at the Nigerian Geological and Survey Agency, Abuja FCT.	Trade -rs	120	3.89	1.01	- 1.62	541	1.96	Accepted

**Significant level = 0.05**

### 4.2.1 Hypothesis One (Ho1):

Hypothesis (Ho1) states that there is significant difference between the opinions of male and female respondents at the Nigerian Geological and Survey Agency, Abuja FCT with regards to effects of effective

communication on organizational performance. The hypothesis was tested at 0.05 alpha level of significance. From the table 4.2 above, the calculated t-values, (-1.62) is less than the t-calculated (1.96). Hypothesis (Ho1) is therefore accepted.

#### 4.2.2 Hypothesis Two (Ho2):

Hypothesis (Ho2) states that there is no significant difference between the opinions of the top management staff and other staff at the Nigerian Geological and Survey Agency, Abuja, FCT with regard to effects of effective communication on organizational performance. This was tested at 0.05 alpha level of significance. From table 4.2 above, the calculated t-value (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho2) is therefore accepted. Respondents therefore accepted in all clusters, there is no significant difference between the opinions of male and female respondents and the top management and other staff at the Nigerian Geological and Survey Agency, Abuja, FCT, as regards the effects of effective communication on organizational performance.

#### 4.3 Summary of Major Findings

To sum up the analysis, the researcher presented information on an interview which he has concluded on the management of Nigerian Geological and Survey Agency, Abuja, FCT. Three middle-level managers and two top managers of the organization were interviewed on their experience and understanding of the four directions of communication that was in the organization, and their suggestions on how they can be improved.

Regarding to communication in Nigerian Geological and Survey Agency, Abuja FCT, the response of the managers confirmed that there was smooth and positive environment that enable each employee to forward ideas and suggestions through the organizational hierarchy. Meanwhile, top managers address instructions, guidance and feedback to the employees comfortably and freely.

The researcher also asked the managers, if the organization uses the four directions of communication. Three of the managers confirmed that upward, downward, horizontal and diagonal communication systems are used at Nigerian Geological and Survey Agency, Abuja, FCT. However, the rest two managers confirmed that diagonal communication is under-utilized.

With respect to how communication improves employees' performance at Nigerian Geological and Survey Agency, Abuja, FCT, the managers confirmed that communication is crucial for employees to perform their work effectively in the organization. Besides this, they agreed that employees' performance is affected by directions of communication. They explained that using grapevine is also an important system, since it is very open and richer which can make significant change in the organization.

The managers confirmed that there is overload work, information distortion and information delay in dissemination which creates challenges to communication at the Nigerian Geological and Survey, Agency, Abuja, FCT.

Effective communication was also negatively affected by poor feedback. Therefore, since the primary responsibility of managers is to develop and maintain an effective communication system in the organization they should listen to feedback from staff and take into account their ideas and comments. Finally, they recommended that all directions of communication should be given emphasis to bring about change and above all, to meet the organizational goals.

#### 4.4 Discussion of Results

The study results indicated that effective team performance and communication for any organization is like blood flow in the human body. Therefore, any organization that understands the importance of communication uses it in their organizational environment. Since, it ensures coordination of factors of production and most importantly material and human element of organization as an efficient network of change and advancement.

Upward communication is good at the Nigerian Geological and Survey Agency, Abuja. Employees can submit their suggestion to their immediate boss, yet their comment related to work should be welcomed and encouraged. According to Hall (2012), upward communication is used to provide feedback, to higher-ups, inform them of progress toward goals, and relay current problems, and suggestion for improvement and new ideas. Modern organizations encourage upward communication through providing performance reports prepared by employees in lower-level managers for review by middle and top-level managers. Besides this, the organization use different means of communication such as, suggestion boxes, employee attitude surveys, grievance procedures, and informal sessions which enables employees to identify and discuss challenges and opportunities with their boss or representative of higher management.

Downward communication is very well practiced at the Nigerian Geological and Survey Agency, Abuja, FCT. Staffs can easily and effectively communicate with their subordinates. According to Robbins (2013), it was found that to produce better job performance downward communication ensures that employees are given the instructions, directions, and guidelines to perform their activities thereby resulting in improved communication and by extension their job performance.

Horizontal communication is equally well-practiced at the Nigerian Geological and Survey Agency, Abuja, FCT with mean rating of (4.913), there is very good peer-to-peer communication in the workplace, therefore managers bring about synergy. However, unnecessary competition between departments should be improved,

since, all departments work to achieve the organizational goal. Tubbs and Moss (2018) opined that some significant functions of the horizontal or flat communication are dominant. This type of communication can help improve coordination between departments regarding task accomplishment; it also encourages effective implementation of upper-level decisions, the reason being that lower-level members within departments are allowed to coordinate closely with one another during the formulation of the decision made at the top; conflict resolution is mutually practiced among members in the same departments without the engagement of management, and to end it, teamwork is facilitated when a project requires tasks from employees.

Diagonal communication result indicates mean (4.269) there is not good diagonal in the organization. Managers should undermine this direction of communication, since all employees work for the same organization and goal. Based on the result, cross-department communication is poor in the organization. Creating an environment that enables each department and staff within the organization has smooth and effective communication is crucial to meet the organizational goal. See Spabo (2013) who stated that the concept of diagonal communication was introduced to capture the new communication challenges associated with new organizational forms, such as matrix and project-based organization. Thus, with the growth of new organizations, directions, employee performance at Nigerian Geological and Survey Agency, Abuja, FCT, the new communication process has been expanded with diagonal communication process has been expanded with diagonal directions too. Tubbs and Moss (2018) in their studies, summarizes the importance of upward communication as: helping employees to alleviate the anxieties and obstructions of the work situation, it also assists management with the needed information for decision-making. Moreover, upward communication facilitates employees' consciousness of participation and also serve as a gauge of the effective downward communication.

Therefore, upward and diagonal communications are important to bring about employees' performance for the next level. Upward communication plays an important role in decision-making. It equally helps employees to avoid anxieties and obstructions of their work environment.

## 5.0 Summary, Conclusion and Recommendations

This section presents the summary, study implications, conclusions and recommendations that draw from the research results.

## 5.2 Summary

The main purpose of the study was to investigate the effects of effective communication on organizational performance in the case of Nigerian Geological and Survey Agency, Abuja, FCT. Particularly, the study evaluated each of the directions of communication available in the above organization. It determined the relationship between effective communication and organizational performance.

Concerning the extent of communication, respondents indicated that there is a moderate upward communication and downward communication is very strong with grand mean of (5.05). There is very good upward communication which is characterized by the presence of forwarding ideas and comments to their subordinates in the organizational hierarchy of the case study. Regarding to employees' performance, there is strong awareness of employees at the Nigerian Geological and Survey Agency, Abuja, FCT. They were well aware of their responsibility and duty to play their own role in performing jobs to achieve organizational goal; 79.5% of respondents replied that they arrived on time.

The interview result shows that there is very good downward and horizontal communication, whereas diagonal communication is under-utilized; and the managers recommended all directions of communication should be in practiced in their organization.

## 5.3 Conclusions

The main purpose of this study was to find out the effects of effective communication on organizational performance in the case of Nigerian Geological and Survey Agency, Abuja, FCT.

Since communication plays crucial role on organizational performance and achievement. The study used both quantitative and qualitative approaches. The research design was descriptive type of research. Based on the data analysis and findings, the following conclusions were made. Regarding to the relationship of communication and organizational performance, the study found that upward and diagonal communications have positive relationship with organizational performance in the case study. Therefore, the organization could use these direction of communication to improve organizational performance. If there is very good communication in the organization, productivity increases, but if there is poor communication, productivity decreases. On the other hand, downward and horizontal communications have insignificant relationship with organizational performance at the Nigerian Geological and Survey Agency, Abuja, FCT.

Interview result shows that the practice of upward and diagonal communication at the Nigerian Geological and Survey Agency, Abuja, FCT, is slightly poor, especially across departmental communication and staff members need to give attention to these directions of communication.

#### 5.4 Recommendations Based on Research Findings

Based on the major findings of the study, the following recommendations are forwarded.

- Upward and diagonal communications significantly affect organizational performance positively, so that the managing body of Nigerian Geological and Survey Agency, Abuja, FCT should give much emphasis to these directions of communication.
- Communication within the organization works in a way of ensuring organizational goal. Therefore, managers should be certain that employees get instructions, guidance and feedback to carry out their duty in simple and effective manner. Besides, these managers also should ensure that the transfer of information is well-organized in the way that employees among themselves are welcoming to forward and receive feedback.
- That diagonal communication has positive and significant relationship with organizational, therefore, the management of Nigerian Geological Agency, Abuja, FCT should give much attention to this direction of communication because it encourages informal flow of information which minimizes the chance of message distortion.
- Upward communication should be encouraged at the Nigerian Geological and Survey Agency, Abuja, FCT, superiors should consider employees' comment about work.
- Regarding to horizontal communication, it has paramount importance to strengthen communication among employees in the same level which enhance teamwork and cooperation. Therefore, the management of Nigerian Geological and Survey Agency, Abuja, FCT should give special attention to this direction of communication.

#### 5.5 Suggestion for Further Studies

The study is on the effects of effective communication on organizational performance adopting a case study from the Nigerian Geological and Survey Agency, Abuja FCT. The study has been able to bring to the fore the significance of effective communication and its positive relationship on organizational performance. Given the importance of effective communications in organizations; it is expedient that more research efforts be put in place to undertake further works in this direction.

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**TARGET MILLENNIALS AND GEN Z, HALAL KULTURE MARKET HELD EARLY NOVEMBER****Namira Clara ALICIA****Faculty of Islamic Economics and Business, State Islamic University of KH Abdurrahman Wahid  
Pekalongan , Indonesia****ORCID ID : <https://orcid.org/0009-0004-6088-7691>****Abstract**

Halal Kulture Market, an event that integrates halal values with style modern life, will held on November 1-3, 2024 at ICE BSD, Tangerang. This event intended For generation millennials and Gen Z, who are becoming segment main the mover trend style living in the present. With more From 200 stalls, Halal Kulture Market offers various products and services halal- based, including fashion, cosmetics, travel, and Islamic finance. In addition to the exhibition, this event present session interactive such as Creative Culture Space and Benefits Talk. Creative Culture Space provides room exploration creative, while Benefits of Talk present discussion inspiring about entrepreneurship and implementation halal values in life everyday. With Ticket enter priced at Rp. 25,000, Halal Kulture Market targets 20,000 to 25,000 visitors during three day organization. This event designed For strengthen understanding generation young about the concept of halal which is not only relevant in aspect religious, but also touching sustainability, ethics and quality life. Halal Kulture Market also aims push development halal industry in Indonesia at the same time strengthen his position in global halal economy. Through an inclusive and modern approach, Halal Kulture Market creates a platform that connects producers, creators, and consumers For share ideas and innovations. This event become reflection from How values traditional can adapted to in trend style life contemporary, so that create relevant and sustainable halal ecosystem. Halal Kulture Market is not only just exhibition, but also a symbol transformation style life that blends halal values with need modern society, at the same time open opportunity for generation young For become a driving force in development halal economy.

**Keywords :** Halal Culture Market, Generation Millennials, Gen Z, Halal Lifestyle, Halal Products, Creative Culture Space, Faedah Talk, Entrepreneurship, ICE BSD, Halal Industry, Halal Economy, Lifestyle Transformation .

## EXPLORING THE INTERSECTION OF ART EDUCATION AND GRAPHIC DESIGN IN DEVELOPING INCLUSIVE LEARNING MATERIALS FOR SPECIAL NEEDS STUDENTS

Ajayi, Olayemi T. and Ajayi, Noah O.

<sup>1</sup>Department of Art and Design, The Federal Polytechnic, Ilaro, Ogun State, Nigeria

[Olayemi.ajayi@federalpolyilaro.edu.ng](mailto:Olayemi.ajayi@federalpolyilaro.edu.ng)

Department of Fine and Applied Arts Education, Lagos State University of Education, Oto/Ijanikin.

### Abstract

Special needs students often face significant barriers in accessing quality education due to the lack of inclusive and adaptive learning materials. Traditional educational tools may not address their unique needs, leaving gaps in cognitive development and creative expression. There is a need to explore how graphic design and art education can collaboratively bridge these gaps. The intersection of art education and graphic design provides a unique opportunity to create inclusive learning materials that cater to diverse learners. By employing visually stimulating and adaptive design principles, educators can enhance accessibility and foster creativity among special needs students. This study investigates the role of graphic design in developing effective educational tools within the context of art education. This research is grounded in Universal Design for Learning (UDL) and Constructivist theories. UDL emphasizes designing materials that accommodate all learners, while Constructivist theory highlights the importance of hands-on, experience-based learning for knowledge construction. These frameworks guide the creation of inclusive, engaging educational resources. A qualitative approach was adopted, involving case studies of special needs art programs and interviews with educators, designers, and therapists. Prototypes of graphic design-based learning materials were developed and tested in inclusive art classrooms to evaluate their effectiveness. The study revealed that graphic design elements such as tactile visuals, interactive media, and simplified layouts significantly improved engagement and comprehension among special needs students. Educators noted increased participation and creativity in classroom activities. Graphic design and art education hold transformative potential in addressing educational inequities for special needs students. Collaboration between designers and educators is crucial for creating adaptive, accessible materials. Future research should explore integrating emerging technologies like augmented reality for enhanced learning experiences.

Keywords: Accessibility, Art Education, Graphic Design, Inclusive Learning, Special Needs Students

## GRAPHIC DESIGN FOR CLIMATE ACTION: VISUAL STRATEGIES FOR PROMOTING BIODIVERSITY CONSERVATION AND RENEWABLE ENERGY ADOPTION

Ajayi, Olayemi T. and Sola Alimi PhD

<sup>1</sup>Department of Art and Design, The Federal Polytechnic, Ilaro, Ogun State, Nigeria

[Olayemi.ajayi@federalpolyilaro.edu.ng](mailto:Olayemi.ajayi@federalpolyilaro.edu.ng)

<sup>2</sup>Department of Art and Design, The Polytechnic Ibadan, Oyo State, Nigeria

### Abstract

With the growing urgency of addressing climate change, there is an increasing need for effective communication strategies that drive environmental awareness and action. Despite the vast amount of scientific data available, the challenge lies in translating this information into accessible, engaging visuals that prompt meaningful public engagement with biodiversity conservation and renewable energy adoption. Graphic design plays a critical role in shaping how complex issues, such as climate change and sustainability, are understood by the public. The role of visuals in climate action campaigns has become crucial in making scientific data comprehensible and emotionally resonant. This research examines how graphic design can be employed to effectively communicate the importance of biodiversity conservation and renewable energy, ultimately encouraging sustainable behaviors across diverse audiences. This study is grounded in visual rhetoric and environmental communication theories. Visual rhetoric explores how images persuade and inform, while environmental communication addresses how messages about sustainability are framed and disseminated. Together, these frameworks guide the exploration of how design can influence perceptions and motivate action toward environmental causes. A mixed-methods approach is adopted, combining qualitative analysis of existing climate-related graphic designs with quantitative surveys to measure audience response and effectiveness. Case studies of successful visual campaigns are examined, alongside interviews with graphic designers and environmental advocates to understand the impact of design in sustainability campaigns. The findings highlight the power of infographics, emotive imagery, and clear messaging in fostering public engagement with climate action. Designs that incorporate both scientific data and emotionally compelling visuals were shown to significantly increase awareness and promote action toward renewable energy use and biodiversity preservation. Graphic design is a powerful tool for promoting climate action. The study recommends that designers continue to collaborate with environmental experts to ensure accuracy while focusing on compelling visual narratives. Future campaigns should integrate interactive and accessible design elements to maximize their impact.

Keywords: Biodiversity, Climate Action, Environmental Communication, Renewable Energy, Visual Rhetoric

**ALBANIA IN THE YEARS (1912- 1914)****Dr. Blerina Xhelaj****University “ Ismail Qemali” Vlorë, Albania****Faculty of Humanities Sciences****Department of Education****e-mail [blerinaxhelaj@yahoo.com](mailto:blerinaxhelaj@yahoo.com)****<https://orcid.org/0009-0008-9169-4146>****Abstract**

**Objective:** The purpose of this paper is to know the albanian state, as well as the problems that have been encountered in this country to be recognized by the Great Powers of Europe during the end of the 19th century and the beginning of the 20th century. This research consists in recognition of political organization of the albanian state in the beginning, which for five centuries was under the occupation of the Ottoman Empire. The theme of the years 1912-1914 deals with the political organization of the first albanian government, headed by Ismail Qemali, who through an intensive work with his contemporaries through the european chancelleries as well as with their support, mainly Italy and Austria, managed to raise the flag in Vlorë, on November 28, 1912. This marked date is the holiday of albanian independence.

**Material and the methods.** The method of this paper is presented through a scientific research work based on written historical sources from historians of the time, but also from the memories of contemporaries of that period. A synthetic and qualitative analysis based on historical facts was used.

**Results:** The declaration of Albania's independence was recognized by the international factor, even Albania was under the protection of 6 Great Powers and under the suzerainty of the Ottoman Empire.

**Conclusions.** The government of Vlorë headed by Ismail Qemali did not create a real and consolidated state for the reason that it did not have a political scope in the entire country, due to the enmity it had with Esat Pasha Toptani, the dislike of the international factor, as well as the conspiracy of Beqir Grebenese, would influence the resignation of the Government of Vlorë on January 22, 1914. It would then be replaced by the arrival of the International Control Commission or KNK, who would later bring a foreign king to Albania, Prince Austrian Vilhelm Vidin. He came to Albania on March 7, 1914, and stayed in power for only 6 months.

**Keywords:** independence, state, government, KNK, chancellery



## INTRODUCTION

Albania was the last Balkan country to break away from the Ottoman Empire. It had been part of the empire for five centuries. In October 1912, the balkan states launched an offensive against the ottoman army. "serbs, greeks, montenegrins and greeks, united in the ballkanic league, started the war against the High Gate" in this offensive". (Valentina Duka, Historia e Shqipërisë 1912- 2000" Tiranë: Kristalina- Kh, 2007, 19)

"They were also influenced by the growth of the liberation-patriotic movement in Albania and Macedonia, as well as Turkey's defeat in the Tripoli war, which led the governments of the Balkan states to undertake a decisive effort to end the Ottoman rule in the Balkans and, after that, to resolve and their territorial problems". (Nina Smirnova, Toena 2005. 55)

"The road to November 28, 1912 has been a difficult road". (Stefanaq Pollo, Tiranë, 1990, 297)

The declaration of independent Albania came at a time when the Ottoman Empire was nearing its end as well as the efforts of the Albanian revivalists, who fought with pen and rifle for the country's independence. Even after the declaration of the independent Albanian state, Albania would face the Balkan wars, led by the Greeks and Serbs, who had direct interests in Albania to conquer it, since they had land borders with it. The declaration of Albania's independence, on November 28, 1912, found the country in a backward state, both from an economic and social point of view. Albania was the poorest country in Europe. Craftsmanship and manufacturing dominated in the cities, where handwork dominated. Most of the population living in the village was engaged in agriculture and animal husbandry. In Albania, there were very few factories that enabled agricultural or industrial production. Illiteracy was a widespread phenomenon. Also, the attacks that were being made on the Albanian borders were a problem that burdened the new Albanian government or known as the Government of Vlora, which did not have a political and legal scope in the entire Albanian territory. Also a danger for the government of Vlora was the figure of Esat Pashë Toptani, who had a political jurisdiction from Durres to Shkodër. In the first days of December 1912, Northern and Central Albania were occupied by Serbian and Montenegrin armies. This invasion also came as a result of Esat Pasha Toptan's cooperation with Serbia. Only in Shkodër did the Turkish resistance continue to exist. In the South, the Greek troops surrounded Ioannina, Chameria, Sazan, Himara, Saranda. The government of Vlora had authority in the narrow area that included Vlora, Berat, Lushnja and Gjirokastra. Elbasan was also included later.

### 1. The government of Vlora

"Ismail Qemali, together with other patriots, after returning from Europe on November 28, 1912, in Vlora, Kreshnik, officially announced the victory of Albania's independence, this event that crowned the great efforts of the albanian people". (Ahmet Kondo, "Aapekte të Lëvizjes Kombëtare", Tiranë: 8 Nëntori, 184)

“After the declaration of albanian independence on November 28, 1912, a few days later the government of Vlora was formed. On the same day, the government of Vlora informed Turkey about the formation of the new state and its determination to protect it against any kind of external interference”.(Pranvera. Dibra, “Shqipëria dhe diplomacia angleze” Neriada 2005, 27)

The government consisted of its chairman, Ismail Qemali, who was the first prime minister of Albania and the architect of the establishment of the albanian state. Nikollë Kacori was elected deputy prime minister. Another organ was the Eldership, which had an advisory and controlling function in the government headed by Vehbi Dibra. The government drafted a series of laws:

- The "Relevant Canon of Civil Administration" was announced.
- The country was divided into prefectures, sub-prefectures and municipalities, which were headed by officials whose activities were limited by an Administrative Council.
- The Law of Jury was drafted, which referred to the judicial organization.
- The Office of the Seventy-Majesty was established and the regulations for the organization of the gendarmerie and militia were approved. (Aleks Trushaj “Historia e popullit shqiptar 1912- 1990, Tirane, shblu, 2009)

The patriotic circles of the time demanded that the government take measures related to the disappearance of medieval debris. The first point was the limitation of feudal property. This matter was also discussed in a special commission that dealt with the borders of fiefdoms. In the composition of the government, there were also elements of the middle bourgeoisie, intellectuals, feudal lords and beylers, with whom Ismail Qemali had to make compromises in order to realize the political goals in the country. In 1913, the Government of Vlora signed an agreement to create a bank with Austro-Italian capital, but this attempt failed.

The government of Vlora made many efforts to extend the authority throughout the country. She took measures so that in Shkodër and Ioannina, where the Turkish resistance continued, to be under the Albanian flag, and she asked the residents of these areas to organize a resistance against the Greeks. A turkish resistance also continued in Shkodra against the Serbo-Montenegrin armies. After the turkish commander abandoned the city, the Government of Vlora asked Esat Pasha Toptan to continue the albanian embroidery under the national flag, but Esat entered into an agreement with Montenegro for the surrender of Shkodra.

This action was condemned by the patriotic circles of the time. In 1913, the Turkish armies capitulated in the Balkans and under these conditions, the Albanian issue passed to the competence of the Great Powers. On December 17, 1912, the Great Powers of Europe gathered to discuss the issue of the territorial extension of the Albanian state. This Conference was chaired by British Foreign minister Edward Grey. The issue of borders and the position that the Albanian state would have in the international arena were discussed there.

Two were the countries most interested in the fate of Albania and albanians from a diplomatic point of view: Austria-Hungary and Italy. They demanded the creation of the albanian state that would serve as an obstacle to the strengthening of the slavic states in the Balkans. Russia, Germany and France demanded the dismemberment of Albanian lands in favor of Albania's neighboring states, such as Serbia, Montenegro, Greece, and Italy. England struggled to find a point of balance in the action of these opposing forces. Even in relation to the southern borders, there were many debates and finally the Italian proposal was accepted, according to which, Korça and Kepi i Stillos would be two columns where the Greek border would not cross.

## 2. Prince Vilhelm Vidi

On July 29, 1913, the Conference of Ambassadors concluded that Albania should be declared an independent, hereditary principality headed by a foreign prince and would be placed under the control and guarantee of the 6 Great Powers, through an international control commission or (KNK). In October 1913, the KNK arrived in Albania, which considered the government of Vlora as a local government. Esat Pashë Toptani came out against the government of Vlora and in Durrës proclaimed the "Old Age of Central Albania". The government of Vlora, disobeying the KNK, tried to establish its rule in the provinces of South Albania, which continued to be under greek rule. In these circumstances, Ismail Qemali was forced to form an alliance with Turkey and Bulgaria, to form an alliance against Serbia and Greece. Istanbul and Sofia promised Ismail Bey that they would return Kosovo to Albania, as well as expel the greek armies from South Albania. This diplomatic action by Ismail Qemali had a negative impact on the KNK and the entire international arena. On January 22, 1914, the government of Vlora resigned. "During the 14 months of its stay in power, the government of Vlora did a lot not only in the internal organization of the new albanian state, but also in the affirmation and recognition of Albania's rights on an international scale". (Arben Puto, "Pavarësia e Shqipërisë dhe diplomacia e Fuqive të Mëdha 1912- 1914", Tiranë:8 Nëntori 1978, 127)

On March 7, 1914, the Austrian prince Vilhelm Vidi came to Albania with the consent of the Great Powers. Prince Vidi was immediately surrounded by noble nobles of that time in Albania, who wanted to occupy an important position in the new government. Turhan Pashë Përmeti is appointed at the head of the new Government. Even Esat Pasha held two positions: that of the minister of the interior and of the war. The Organic Statute of Albania, similar to a constitution, was created. It was drawn up on April 10, 1914, where the first article stated that Albania was declared a constitutional, sovereign, hereditary principality, under the guarantee of the six Great Powers. The Legislative Assembly was created, which had no power over the executive bodies. Albania was divided into 7 sanjaks, kazas and nahijes that replaced prefectures and sub-

prefectures. Vidi did not know the Albanian reality well. He faced many problems within the country. During the time of Vid, the border issue with Greece was opened again. "They organized the putsch of Korca". Gazmend Shpuza "Kryengritja fshatare e Haxhi Qamilit" Tiranë: 1986, 8 Nëntori, 40)

Also, he was faced with the issue of Vorioepire, where Greece was preparing plans for the annexation of the southern lands of Albania. On March 2, 1914, a congress was held in Gjirokastrë, chaired by Jorgo Zografi, which sought to create a government within Southern Albania. Faced with this danger, on May 17, 1914, the KNK reached the agreement of Corfu, that the provinces of Korca and Himara would be semi-autonomous, and the Greek language would be used. This agreement caused a great anger in Albanian patriotic circles, inside and outside the country. Vidi's government also faced an uprising that was breaking out in Central Albania, led by Haxhi Qamili, who demanded Vidi's departure from Albania. the arrival of a Muslim prince, the appointment of a Turkish representative in the KNK, the return of Albania under Turkey, the use of a Turkish-Arabic alphabet, the raising of the Turkish flag, etc. Vidi found neither the support of the internal factor, nor the external factor, the latter of which had themselves brought this foreign prince to power. The approach of the First World War influenced Prince Vid's departure from Albania in September 1914. During the First World War, Albania was divided into four zones of occupation: "Central Northern Albania and the southwestern one up to the Vjosa river was the area of Austro-Hungarian occupation; Southern Albania was an area of Italian occupation; South-Eastern Albania, area of French occupation and a part of Eastern Albania, area of Bulgarian occupation". (Valentina Duka, Kristalina KH 2007, 90)

## CONCLUSIONS

The declaration of independence of Albania is one of the most important events of the Albanian national history after the Skenderbejan period, "whereas the day of raising the national flag, the symbol of the establishment of the Albanian state, is a national holiday of all Albanians". (Nina Smirnova, Tirana 2004, 59)

Of course, many important political figures and Albanian patriots, who have made a great contribution to the Albanian national cause, such as Ismail Qemali, Abdyl Frashëri, who have been deputies of the Ottoman Parliament for the representation of Albanians, have influenced this marked day. A great contribution has also been made by other patriotic figures who fought for the independence of Albania such as: Bajram Curri, Hasan Prishtina, Isa Boletini, etc., during the years 1910-1912. The declaration of Albanian independence is one of the most important historical acts for the identity and the culture of Albanians. The act of independence marks the beginnings of the Albanian state. The new government would face many problems of different natures, such as economic and social problems, attacks on Albania's borders by neighboring countries, Serbia, Greece, but also

enmity with Esat Pasha Toptani, would cause a shock in the Government of Vlora. Also, the conspiracy of Beqir Grebene is another issue related to the alliance that Ismail Qemali will create with Bulgaria and Turkey to balance the policy of the aggressive Serbian-Greek neighbors, which were supported by the Great Powers. The Albanian-Turkish-Bulgarian alliance would incite hostility in European circles, where the Great Powers would consider it a hostile act towards them. After this event, Ismail Qemali and his entire government cabinet would resign on January 22, 1914, to pave the way for the interests of the Great Powers, which through the KNK brought to Albania a foreign prince to lead Albania and the Albanians. Prince Vidi did not have any information about Albania, nor did he know the Albanian reality. He faced the insurrection in Central Albania which was considered an "anti-national, pro-turkish movement of the "ignorant" mobs of hick".(Gazmend Shpuza, "Aspekte të mendimit politik shoqëror shqiptar 1913- 1915", Tiranë: 8 Nëntori 1990, 9) The Vorioepirote issue, the indifference of the Great Powers to help Prince Vidin, as well as the approach of the First World War, would influence his departure from Albania in September 1914. He stayed only 6 months in Albania. This figure has been evaluated positively by many historians, for the affection he showed towards the Albanians. According to the researcher Hazis Gjergji, he writes: "there was no doubt that Prince Vidi wanted to devote himself to the establishment of the new Albanian state".(Hazis Gjergji, " Myslym Peza, dëshmimtarët dhe protagonistët në historinë e Shqipërisë 1912- 1939" Tiranë: 2008. 49)

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**ALBANIAN NATIONAL RENAISSANCE****Dr. Blerina Xhelaj****University “Ismail Qemali” Vlora, Albania****Faculty of Humanities Sciences****Department of Education****e-mail [blerinaxhelaj@yahoo.com](mailto:blerinaxhelaj@yahoo.com)****<https://orcid.org/0009-0008-9169-4146>****Abstract**

**Objective:** The purpose of this presentation is to describe, analyze the features of the Albanian National Renaissance, as well as evaluate the figures of the albanian renaissancers, who have given a great contribution to the issue of albanian independence.

**Materials and the methods:** For the work of this presentation, I have referred to the albanian historiography, which are contemporaneous, as well as the figures of the Albanian Renaissance, which were present during this time.

**Discussion:** The Albanian National Renaissance includes the period of 1830-1912, which consists of the efforts of albanian patriots towards the independence of Albania. The Albanian National Renaissance has developed in two forms: First, by means of the pen, secondly, by means of war. The Albanian National Renaissance, or RKSH for short, consists of 4 phases:

The 1830s - 1870, which is characterized by major uprisings.

The years 1878-1881 constitute the culmination of the RKSH, where with the creation of the Albanian League of Prizren, a clear political program emerged for the protection of territorial integrity.

The years 1881-1908 constitute the third phase, where attention is focused on the ideological and cultural field.

The years 1908-1912 constitute the fourth phase, where the armed movement emerges, which led to the declaration of Albania's independence on November 28, 1912.

**Results:** The results of this work are the patriotic war and the labor war organized by the albanians inside and outside Albania, which gave a very big contribution to the declaration of independence of Albania.

**Conclusions:** The last phase of the years 1908-1912 was the decisive period of the Renaissance, where after the development of battles and the development of a wide diplomatic activity, Albania raised the flag of independence on November 28, 1912, declaring itself as the last country in Balkans from the Ottoman Empire.

**Keywords:** National Renaissance, renaissance, patriot, ideology, independence



## ALBANIA AND THE BALKANS FACED BY MILITARY ALLIANCES DURING THE FIRST WORLD WAR

Dr. Blerina Xhelaj

University “Ismail Qemali” Vlora, Albania

Faculty of Humanities Sciences

Department of Education

e.mail [blerinaxhelaj@yahoo.com](mailto:blerinaxhelaj@yahoo.com)

<https://orcid.org/0009-0008-9169-4146>

### Abstract

**Objective:** The purpose of this presentation is the description and analysis of the political situation in Albania during the First World War, as well as the position that Albania, but also other countries of the Balkan region, would take in front of the two military blocs (Entente and Central Bloc).

**Materials and the Methodology:** The materials used in this work refer to written historical sources using a general analysis and synthesis for this issue.

The First World War began on July 28, 1914. The cause was the assassination in Sarajevo of the heir to the Austro-Hungarian throne, Franz Ferdinand, by a Bosnian. The Austro-Hungarian government asked the Serbian government in the form of an ultimatum to respond to this act, but the latter did not react diplomatically. Under these circumstances, Austria-Hungary declares war on Serbia. Germany, taking advantage of this opportunity, goes to military aid, Austro-Hungarian, while England, France and Russia go to the aid of Serbia.

**Result:** The real cause of the outbreak of the First World War was the rivalry of the six Great Powers during the first half of the 20th century, between the two military blocs that had been created in Europe, which were: the Central Bloc consisting of Germany, Austria - Hungary and Italy, while the Entente was the other military alliance consisting of: England, France and Russia. Later, Italy was also included in the Entente.

**Discussion:** The Balkan countries were included with their positions in the two military alliances. Serbia, Romania, Greece were oriented towards the Entente. Meanwhile, Bulgaria and Turkey were oriented towards the Central Bloc.

**Conclusions:** Albania during the war years (1914-1918) was under the occupation of Italy, Austria-Hungary, Greece and France, so it was not independent to maintain its position towards the military alliances that were at war with each other.

**Keywords:** Entente, military bloc, alliance, war, cause.

**ORDER OF GROWTH OF SOLUTIONS OF DIFFERENTIAL EQUATIONS IN UNIT DISC****Fettouch Houari****,University of Mostaganem, Faculty of Sciences Exact and Computer Science, Department of Mathematics and Computer Science Algeria.****[Houari.fettouch@univ-mosta.dz](mailto:Houari.fettouch@univ-mosta.dz)**

**Keywords:** Differential equations, exponent of convergence, growth of solutions, unit disc.

**ABSTRACT**

We study the standard notations of the Nevanlinna value distribution theory of meromorphic function on the complex plane and in the unit disc. In addition, for the  $n$ -iterated order of meromorphic function in is defined by

$$\sigma_n(f) = \limsup_{r \rightarrow 1^-} \frac{\log_n^+ T(r, f)}{-\log(1-r)},$$

where and is the Nevanlinna characteristic function of. For an analytic function in we have also

$$\sigma_{M,n}(f) = \limsup_{r \rightarrow 1^-} \frac{\log_{n+1}^+ M(r, f)}{-\log(1-r)},$$

where. If is analytic in, Tsuji [tsu], p.205] gives that

For example, the function satisfies and  $\sigma_{M,1}(f) = \mu$ .

Obviously, we have

The inequalities (00) are the best possible in the sense that there are analytic functions and  $h$  such that and.

However, it follows by Proposition 2.2.2 in [lain] that for. The type of a meromorphic function in with is defined by

$$\tau_n(f) = \limsup_{r \rightarrow 1^-} (1-r)^{\sigma_n} \log_{n-1}^+ T(r, f);$$

and if is an analytic function in with we have also

$$\tau_{M,n}(f) = \limsup_{r \rightarrow 1^-} (1-r)^{\sigma_n} \log_n^+ M(r, f).$$

We signal that also by Proposition 2.2.2 in [1], we have for .

Definition meromorphic function in the unit disc is called admissible if

$$\limsup_{r \rightarrow 1^-} \frac{T(r, f)}{-\log(1-r)} = \infty$$

and nonadmissible if

$$\limsup_{r \rightarrow 1^-} \frac{T(r, f)}{-\log(1-r)} < \infty.$$

The growth index of the iterated order of a meromorphic function in is defined by

We will use the notation to denote the n-iterated exponent of convergence of the zero-sequence of meromorphic function and to denote the -iterated exponent of convergence of distinct zero-sequence of , which are defined as the following:

$$\lambda_n(f) = \limsup_{r \rightarrow 1^-} \frac{\log N(r, \frac{1}{f})}{-\log(1-r)} \quad \text{and} \quad \bar{\lambda}_n(f) = \limsup_{r \rightarrow 1^-} \frac{\log \bar{N}(r, \frac{1}{f})}{-\log(1-r)}.$$

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## STABILITY OF LOGARITHMIC TYPE FOR A HADAMARD FRACTIONAL

**Dr. FETTOUCH Houari**

Laboratory of Pure and Applied Mathematics, University of Mostaganem, UMAB, Algeria,

[fettouch72@yahoo.fr](mailto:fettouch72@yahoo.fr)

ORCID: 0000-0002-8488-3431

*Keywords:* Lane-Emden type equation; Phi-Caputo derivative; Banach contraction.

### 1. INTRODUCTION

The fractional calculus has a proved to be very important in various scientific fields, see for instance [1-6]. However, most of these research works have been considered by applications of the following fractonal approaches: Riemann-Liouville, Hadamard, Katugampola, and Caputo. But, the approach using "functions with respect to another function" seem to be absent in the above studies. Such approach can be found in [7]; it is different from all the others since its kernel is considered as term of another function  $\varphi$ . Recently, some results related to this pproch have been considered in [8-11]. In most of the present articles, Schauder, Krasnoselskii, Darbo, or Monch theories have been used to prove existence of solutions of nonlinear fractional differential equations with some restrictive conditions [12-15]. Before recalling some other equations and problems that have motivated the present work, we remind the reader that the standard form of Lane Emden equation has the following form:

$$\begin{cases} y''(t) + \frac{\mu}{t} y'(t) + f(t, y(t)) = g(t), t \in [0, 1], \mu \geq 0 \\ y(0) = a_1, y'(0) = a_2, \end{cases}$$

where  $a_1, a_2$  are constants,  $f$  and  $g$  are continuous functions (see [16]).

Y. Bahous and Z. Dahmani [17] have considered a Lane Emden type problem involving both Caputo derivative and Riemann-Liouville integral in its nonlinearities. The problem is the following:

where  $\mathbf{D}^\alpha$  is in the sense of Caputo,  $\mathbf{I}^\rho$  is the Riemann-Liouville integral of order  $\rho$ , the functions  $g, f : [0, 1] \times \mathbb{R} \times \mathbb{R} \rightarrow \mathbb{R}$  are continuous and  $h, q$  are continuous over  $[0, 1]$ . The authors have investigated the existence and uniqueness of solutions. Then, they have studied the Ulam-Hyers stability.

**Example:** Consider the following nonlinear Langevin equation of fractional orders

Observe that the function  $\varphi(t) = \ln t$ , is continuous, also

Thus, the assumptions ( ) and ( ) are satisfied and Theorem implies that the problem has a solution.

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## DECISION-MAKING FRAMEWORK WITH HAMY MEAN OPERATORS AND LINGUISTIC Q-RUNG ORTHOPAIR FUZZY SETS

Scholar. Amjid Khan

Institute of Numerical Sciences, Kohat University of Science and Technology KPK, Pakistan

[amjid2019maths@gmail.com](mailto:amjid2019maths@gmail.com),

Dr. Jawad Ali

Institute of Numerical Sciences, Kohat University of Science and Technology KPK, Pakistan

[jawadsabirr@gmail.com](mailto:jawadsabirr@gmail.com),

### ABSTRACT

The application of linguistic variables is essential for processing qualitative information in mathematical modeling and decision-making under uncertainty. The linguistic q-rung orthopair fuzzy (Lq-ROF) set, an advanced linguistic fuzzy framework, offers enhanced flexibility for decision-making problems involving qualitative data by incorporating the rung parameter 'q'. In this study, we introduce four classes of Lq-ROF Hamy mean operators—the Lq-ROF Hamy mean operator, the Lq-ROF dual Hamy mean operator, the Lq-ROF weighted Hamy mean operator, and the Lq-ROF weighted dual Hamy mean operator—and examine their key properties. We also extend the complex proportional assessment of alternatives (COPRAS) method with Lq-ROF sets, proposing a novel approach to multiattribute group decision-making under Lq-ROF information. This framework is demonstrated through a case study on selecting an AI-based predictive maintenance system for manufacturing. The stability and effectiveness of our method are validated through parameter analysis and comparative evaluation with existing approaches.



## STATISTICAL GRAPHS QUALITY AND ETHICS IN OCCUPATIONAL HEALTH AND SAFETY COMMUNICATION

**Carla Santos\***

**Polytechnic Institute of Beja, and NOVAMATH -Center of Mathematics and Applications, FST, New**

**University of Lisbon, Portugal**

**ORCID: 0000-0002-0077-1249**

**Ana Dias**

**Polytechnic Institute of Beja, and Life Quality Research Center-CIEQV, Portugal**

**ORCID: 0000-0001-5300-2331**

**\*corresponding author: carla.santos@ipbeja.pt**

### Abstract

Statistical graphs should be produced in a way that represents data accurately and non-deceptively, allowing for correct interpretation by users. An ethical approach to statistical graphs involves several key principles to ensure accurate and responsible data representation. In the field of occupational health and safety management, clear and honest representation of data is critical, as misinterpreting or manipulating statistical information could have significant consequences for public health and safety. In this study, we address the core ethical principles and their practical implications within statistical data graphical representation, referencing key guidelines like those outlined in the European Statistics Code of Practice. This Code includes 16 principles that provide a framework for ethical decision-making, ensuring high moral standards throughout the research process. We specifically examine the ethics surrounding the creation of statistical graphs, particularly in relation to Principle 6, which emphasizes "impartiality and objectivity," and Principle 15, which advocates for "accessibility and clarity." In the context of statistical graphs, this means that graphs should be designed to reflect data truthfully and without distortion, ensuring that users can interpret the information correctly.

Keywords: Data Visualization, Graphic Representation, Graphical integrity, Impartiality in Statistics, Statistical Transparency.

## FINITE ELEMENT METHOD FOR FRACTIONAL ORDER 2D DIFFUSION EQUATIONS

**Azhar Nawaz**

### Abstract

In this work, we provide a detailed discussion and numerical solution of the Fractional order (FC) two-dimensional (2D) diffusion equations using the Finite Element Method (FEM). Anomalous diffusion processes, which cannot be adequately modeled by classical diffusion equations, can be more accurately described using Fractional Diffusion Equations (FDEs) that incorporate non-integer order derivatives. The aim of this work is to design an accurate and stable numerical method for the Fractional Order Derivatives in the spatial variables. In the first section, we define the Fractional Order 2D diffusion equation and provide some background on fractional calculus that will be used in the subsequent analysis. The Galerkin Finite Element Method is used to approximate the solution over the spatial domain and convert the PDE into an algebraic system of equations. To investigate the performance of new proposal approach, we apply the new method the classical diffusion equation, as the first test problem. In second part of our numerical experiment we will consider for Fractional Order Diffusion equations as the problem and illustrate the results.

## LINEARIZATION OF SOME CLASSES OF NON-LINEAR SECOND ORDER ODES

By: INZIMAM ULHAQ

KUST University of Science and technology, Kohat, KPK, Pakistan.

### Abstract

Nonlinear second-order ordinary differential equations (ODEs) are essential for understanding complicated systems in many scientific and engineering domains. Nonlinear second-order ODEs are integral to understanding natural phenomena, where processes like growth, evolution, and interaction often exhibit inherent nonlinearity. Nevertheless, the nonlinear character of these equations frequently makes it difficult to find exact solutions. This paper focuses on the linearization of certain classes of nonlinear second-order ODEs by employing the powerful framework of Lie symmetry analysis. Lie symmetries provide a systematic method for transforming nonlinear equations into linear forms under appropriate conditions, facilitating the discovery of solutions and gaining deeper insights into the behavior of the system. This work systematically explores how such nonlinear systems, omnipresent in nature and engineering, can be transformed into simpler linear forms under specific conditions. We investigate specific classes of second-order nonlinear ODEs, identify their corresponding Lie symmetries, and present conditions under which linearization is possible. By exploiting Lie symmetries, we establish a framework to simplify the analysis of nonlinear systems, uncovering exact solutions where possible. The results contribute to the growing body of work aimed at simplifying nonlinear problems, enhancing the analytical tractability of such systems, and offering potential applications in mathematical physics, control theory, and related areas.

**The keywords:** Linearization, Nonlinear second order ODEs, Symmetry, Lie Symmetry.

## POLYNOMIAL FINITE ELEMENT METHOD FOR PROBLEMS WITH NON-HOMOGENEOUS BOUNDARY CONDITIONS OVER CURVED DOMAINS

ZIA UR REHMAN

Institute of Numerical Sciences, Kohat University of Science and  
Technology, Kohat, Pakistan  
zurrehman338@gmail.com

### Abstract

We construct finite element spaces of bivariate piecewise polynomial functions for non-homogeneous boundary conditions over curved domains using method of Bernstein-Bezier basis, which provides a stable local basis for the corresponding spaces. The Galerkin method is applied, reducing the problem to a matrix equation.

Numerical results for different problems are tested to evaluate the accuracy of the method.

The proposed method is capable of handling complex geometries and non-homogeneous boundary conditions, making it a valuable tool for solving partial differential equations (PDEs) in various fields of science and engineering. The numerical results demonstrate the accuracy and efficiency of the method, and show that it can be used to solve a wide range of problems. The method's ability to handle curved domains and non-homogeneous boundary conditions makes it a significant contribution to the field of finite element methods.

Keywords: Bernstein-Bezier Basis, Curved Domains, Galerkin method

## EFFECTS OF ELECTRIC AND MAGNETIC FIELDS ON BLOCH OSCILLATIONS IN MONOLAYER $\beta_{12}$ BOROPHENE

Inam Ullah and Abdullah Yar\*

Department of Physics, Kohat University of Science & Technology(KUST),kohat,Pakistan

\*corresponding Author:

Name:Dr.Abdullah Yar,

Associate Professor of physics

Department of physics, Kohat University of Science & Technology(KUST),kohat,Pakistan

E-mail:PH320222011@kust.edu.com\inamzalmi809@gmail.com

**Abstract:** The Bloch oscillations of Dirac fermion wave packet is investigated within the framework semiclassical approach. We find that the group and Berry velocities and the real-space trajectories exhibit pronounced Bloch oscillations, which depend strongly on the geometric parameters and crystal momentum of the system. The effects of applied in-plane electric and transverse magnetic fields are determined within Newtonian mechanics, leading to the geometric visualization of such an oscillatory motion. We find that in the presence of both applied in-plane electric and transverse magnetic fields simultaneously, the system undergoes a dynamic phase transition between confined and de-confined states, tuned by the relative strength of the fields. It is argued that the distinct Bloch oscillations originate from the peculiar band structure of monolayer borophene.

**KEY WORD:**Bloch oscillation,Berry velocities, Borophene.

## HOLOMORPHIC CURVES INTO ALGEBRAIC VARIETIES INTERSECTING DIVISORS IN SUBGENERAL POSITION

HASSAN ZARIOUH

Department of Mathematics (CRMEF-Oujda), Oujda 60000, Morocco.

[h.zariouh@yahoo.fr](mailto:h.zariouh@yahoo.fr)

### ABSTR ACT:

Recently, there are many developments on the second main theorem for holomorphic curves into algebraic varieties intersecting divisors in general position or subgeneral position. In this paper, we refine the concept of subgeneral position by introducing the notion of the index of subgeneral position. With this new notion we give some surprising improvement of the previous known second main theorem type results. Moreover, via the analogue between Nevanlinna theory and Diophantine approximation, the corresponding Schmidt's subspace type theorems are also established in the final section.

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## PERSUASIVE ATTRACTIONS IN THE ADVERTISING DISCOURSE: TELEVISION ADVERTISING THAT TARGETS ADOLESCENT AS AN EXAMPLE

**TARIK RHARMAOUI**

**French language Department(CRMEF-Oujda), Oujda 60000, Morocco.**

**HASSAN ZARIOUH**

**Department of Mathematics (CRMEF-Oujda), Oujda 60000, Morocco.**

**h.zariouh@yahoo.fr**

### **ABSTR ACT:**

Teenagers are generally the most attentive to advertising messages broadcast on television because of the seductive impact of advertising discourse. Advertisers find in this age group a valuable target and a juicy market to convey their products. Teenagers represent a large segment of consumers and future customers loyal. As a result, we find advertisements aimed at adolescents emphasizing psychological aspects, and relying on emotional solicitation in the design of advertising messages in order to attract them, and influence their tastes and their purchasing choices. By addressing this age group, the advertising image works to make the dreams of adolescents come true, thus it presents a purified world full of adventure, joy, and fun, free from all constraints. A world in which his ambitions to be toned, strong, beautiful are realized, which fills him with pleasure, and appeasement. And to achieve this purpose the advertising discourse exploits in addition to what precedes the suggestive force of the language, the rhetoric of the electronic image, and the capacity it provides to dazzle and entertain in order to ensure the achievement of the desired effect.

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## SOME IDENTITIES POLYNOMIAL IN 3-PRIME NEAR-RINGS

Abderrahmane RAJI

LMACS Laboratory, Faculty of Sciences and Technology,  
Sultan Moulay Slimane University, Beni Mellal, Morocco

[rajiabd2@gmail.com](mailto:rajiabd2@gmail.com)

### Abstract

We consider  $N$  to be a 3-prime field and  $P$  to be a prime ideal of  $N$ . In this paper, we study the commutativity of the quotient ring  $N/P$  with left multipliers and derivations satisfying certain identities on  $P$ , generalizing some well-known results in the literature. Furthermore, examples are used to illustrate the necessity of our hypotheses.

**Keywords:** 3-prime near-rings, derivations, left multipliers, commutativity.

## IDENTITIES IN 3-PRIME NEAR-RINGS INVOLVING LEFT GENERALIZED HOMODERIVATIONS

**Abdelkarim BOUA**

<https://orcid.org/0000-0002-6397-4713>:

[abdelkarimboua@yahoo.fr](mailto:abdelkarimboua@yahoo.fr)

Sidi Mohammed Ben Abdellah University, FEZ

Polydisciplinary Faculty, LSI, Taza; Morocco

**Abstract.** In this paper, the structure of 3-prime near-rings with left generalized homoderivation satisfying certain conditions on a semigroup ideal will be investigated. After that, we'll provide examples to explain why the hypotheses used in the various results are necessary.

**Key words.** 3-prime near-rings, left generalized homoderivation, commutativity,

**Özet.** B

u makalede, bir yarıgrup ideali üzerinde belirli koşulları sağlayan sol genelleştirilmiş homoderivasyonlu 3-asal yakın halkaların yapısı incelenecektir. Daha sonra, çeşitli sonuçlarda kullanılan hipotezlerin neden gerekli olduğunu açıklamak için örnekler vereceğiz.

**Anahtar kelimeler.** 3-asal yakın halkalar, sol genelleştirilmiş homoderivasyon, değişmelili

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## THE IMPACT OF CLIMATE CHANGE ON PUBLIC HEALTH AND STRATEGIES FOR ADAPTATION

**Abdu Mustapha**

**Department of Human Kinetics and Health Education, Federal University Dutsen-Ma, Katsina State, Nigeria**

[obadaki@fudutsinma.edu.ng](mailto:obadaki@fudutsinma.edu.ng)

**Badaki Olusegun,**

**Department of Human Kinetics and Health Education, Federal University Dutsen-Ma, Katsina State, Nigeria**

[amustapha@fudutsinma.edu.ng](mailto:amustapha@fudutsinma.edu.ng)

**Yakubu Inuwa Balewa**

[ybalewa@fudutsinma.edu.ng](mailto:ybalewa@fudutsinma.edu.ng)

**Department of Human Kinetics and Health Education, Federal University Dutsen-Ma, Katsina State, Nigeria**

**Aminu Adamu Ahmed\***

**Department of Information Communication Technology, Federal Polytechnic Kaltungo, Gombe State, Nigeria**

[aaahmed.pg@atbu.edu.ng](mailto:aaahmed.pg@atbu.edu.ng)\*

### Abstract

Climate change affects the frequency and prevalence of many health conditions, raising severe concerns for public health. The purpose of this study is to investigate the effects of climate change on public health through a semi-systematic literature review (Semi SLR). It will focus on both direct and indirect health effects and find effective adaption strategies. A number of academic databases, including PubMed, Scopus, and Web of Science, were extensively searched to find relevant literature. The review focused on peer-reviewed, recently published research that examined the health effects of climate change, including vector-borne infections, heat-related disorders, and mental health problems. The findings demonstrate that low-income populations and the elderly are among the most vulnerable groups that climate change disproportionately affects.

**Keywords:** Climate Change, Public Health, Adaptation Strategy, Health Implication

### 1.0 Introduction

One of the biggest issues of our day is climate change, which has far-reaching effects that go beyond environmental degradation to include public health. Climate change is characterised by long-term changes in temperature, precipitation patterns, and extreme weather occurrences. The main human causes of this change include industrial processes, deforestation, and the use of fossil fuels (IPCC, 2021). According to the World Health Organisation (WHO, 2021), between 2030 and 2050, climate change is expected to result in an extra 250,000 deaths per year, the most of which will be from heat stress, diarrhoea, malaria, and malnourishment. The relevance of climate change to public health is highlighted by its ability to influence health outcomes



through numerous paths. One of the biggest issues of our day is climate change, which has far-reaching effects that go beyond environmental degradation to include public health. Climate change is characterised by long-term changes in temperature, precipitation patterns, and extreme weather occurrences. The main human causes of this change include industrial processes, deforestation, and the use of fossil fuels (IPCC, 2021). According to the World Health Organisation (WHO, 2021), between 2030 and 2050, climate change is expected to result in an extra 250,000 deaths per year, the most of which will be from heat stress, diarrhoea, malaria, and malnourishment. The relevance of climate change to public health is highlighted by its ability to influence health outcomes through numerous paths. Due to the poor resources and potential for adaptation, marginalised and disadvantaged communities frequently bear the brunt of the effects of climate change, with its repercussions not being evenly dispersed (Vins et al., 2015). Public health concerns must be given top priority in conversations about climate change since groups such as the elderly, people with pre-existing medical illnesses, and low-income communities have exacerbated vulnerability. Developing successful public health initiatives and policies that can lessen the negative effects of climate change requires an understanding of these implications.

This study's main goal is to perform a systematic literature review (SLR) that examines how public health may be impacted by climate change, with a particular emphasis on the direct and indirect effects on health and the development of practical adaptation measures. This goal emphasises the incorporation of public health concerns into climate change policy and practice by synthesising the results of previous research to give a thorough understanding of how health outcomes are impacted by climate change across various populations and contexts.

## **2.0 Literature Review**

The literature on climate change and public health is wide and complicated, reflecting the complex connection between environmental changes and health effects. The main conclusions of recent research on the direct and indirect effects of climate change on public health are summarised in this overview, along with the adaptation tactics that have been suggested to deal with these issues.

### **2.1 Direct Effects of Climate Change on Health**

#### **2.1.1 Severe weather conditions**

Extreme weather events are one of the most direct and immediate effects of climate change on health. There are serious health effects from these occurrences, which include heat waves, hurricanes, floods, and wildfires. Particularly in vulnerable populations including the elderly, those with chronic illnesses, and low-income communities, heatwaves have been linked to higher rates of morbidity and mortality (Kjellstrom et al.,

2016). According to a systematic analysis by Mora et al. (2017), there could be a significant rise in the frequency of extreme heat events by 2100, which could put billions of people at risk for heat-related disorders such as heat exhaustion and heatstroke. Furthermore, when storms and flooding become more intense and frequent, the trauma of going through such a disaster can cause injuries, fatalities, and mental health problems (Patel et al., 2021). For instance, the aftermath of Hurricane Katrina in the United States brought to light the psychological repercussions that survivors may experience for a long time, such as depression and post-traumatic stress disorder (PTSD) (Gonzalez et al., 2010).

### **2.1.2 Respiratory health and air quality**

Additionally, poor air quality is a result of climate change, which increases the risk of respiratory ailments. Conditions including asthma and chronic obstructive pulmonary disease (COPD) are made worse by an increase in ground-level ozone production brought on by rising temperatures (IPCC, 2021). Chen et al.'s study from 2021 demonstrated a direct correlation between rising temperatures and greater air pollution levels, highlighting the necessity of efficient air quality management in light of climate change. In addition, the increased frequency of wildfires as a result of climate change releases particulate matter into the atmosphere, which can cause respiratory issues as well as cardiovascular disorders (Liu et al., 2020).

## **2.2 Indirect Health Impacts of Climate Change**

### **2.2.1 Vector-borne illnesses**

Climate change's indirect effects on health are also worrisome, particularly in light of the development of infectious diseases. Variations in temperature, humidity, and precipitation patterns can have a substantial impact on the habitats and behaviours of vectors, including ticks and mosquitoes, which can change the frequency of diseases carried by these vectors (Liu-Helmersson et al., 2016). For example, the occurrence of diseases like dengue fever and the Zika virus has been associated with mosquitoes' global range expansion (Ryan et al., 2019). The global effects of climate change on infectious illnesses were highlighted by a study conducted in 2019 by Caminade et al., which showed that the risk of dengue and chikungunya virus transmission in Europe could increase due to climate change.

### **2.2.2 Food and water security**

The security of food and water is further aggravated by climate change. Extreme weather events, higher temperatures, and changed rainfall patterns can all have a detrimental impact on agricultural output, which can result in food shortages and higher costs (Hawkes et al., 2015). Malnutrition may arise from these issues with food security, particularly in vulnerable groups. Furthermore, the supply of safe drinking water is challenged by

climate change, since flooding can contaminate water sources with bacteria and chemicals, leading to waterborne diseases such as cholera and typhoid fever (Bennett et al., 2020).

### **2.3 Mental Health Implications**

Mental health is another key area touched by climate change. Anxiety, sadness, and PTSD rates have been linked to exposure to climate-related disasters, such as hurricanes and wildfires (Clayton et al., 2017). These mental health issues are made worse by the psychological stresses associated with climate change, which include ecological degradation, displacement, and loss of livelihoods. According to a 2017 American Psychological Association report, people who feel helpless in the face of climate change may experience climate anxiety, which is becoming more widely acknowledged as a real mental health issue.

### **2.4 Strategies for Adaptation**

Considering the numerous negative effects of climate change on health, adaption measures are crucial for reducing these effects. Luber and Prudent's (2020) comprehensive review revealed a number of successful adaptation tactics, such as bolstering the public health system, creating early warning systems for severe weather, and boosting community resilience via awareness and education campaigns. Incorporating climate health concerns into urban planning and policy formulation is crucial to guarantee that environmental and health policies complement each other (Ebi & Semenza, 2020).

#### **2.4.1 Technology and data analytics**

Using technology and data analytics to track health trends and anticipate future health emergencies linked to climate change is one strategy that shows promise. In response to shifting climatic circumstances, real-time data can be used to monitor the introduction of vector-borne diseases and enable prompt treatments (Harris et al., 2021). Moreover, predictive modeling can assist health authorities prepare for and reduce the implications of climate change on health systems.

#### **2.4.2 Community engagement and resilience**

Promoting community involvement and participation in adaptation planning can enable people to successfully address health issues linked to climate change. Research has demonstrated that incorporating local residents in decision-making processes through community-based adaptation strategies can boost resilience and improve health outcomes (Savo et al., 2016). Programs that, for example, inform local populations about the health hazards posed by climate change and offer resources for readiness can dramatically lower vulnerability. The research underlines the critical need for a complete understanding of the health impacts of climate change and the need of developing appropriate adaption strategies. Protecting the health and wellbeing of people everywhere will depend on giving public health considerations top priority in climate action as the international

community struggles to address the effects of climate change. To keep public health at the forefront of climate change activities, future research should investigate novel adaption measures and evaluate their efficacy in a range of scenarios.

### 3.0 Methodology

This study's technique is based on the Semi SLR. The flexibility of a standard literature review is combined with the methodical and rigorous approach of a systematic review in this study strategy. This method makes it possible to compile the body of knowledge on the subject in an objective and thorough manner.

### 3.1 Research Design

The review is a study design that combines the adaptability of a standard literature review with the strict and methodical approach of a systematic review. This method makes it possible to compile the body of knowledge on the subject in an objective and thorough manner.

### 3.2 Literature Sample Selection

A thorough search across numerous databases as illustrated in Figure 1, including Scopus, Web of Science, PubMed, Science Direct, and Google Scholar, was conducted in order to identify the literature sample. A mix of relevant keywords were used to do the search. To ensure that the most recent and pertinent studies were included, the search was restricted to English-language publications published between 2015 and July 2024 (see, Figure 2).

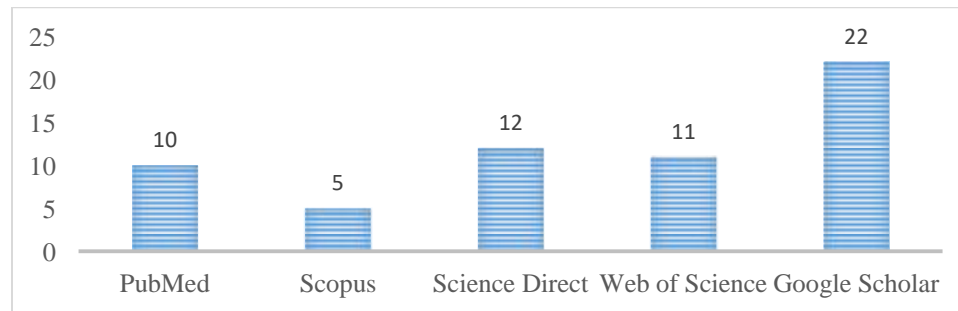


Figure 1. Study Samples based on Research Databases

### 3.3 Inclusion and Exclusion Techniques

The quality and relevance of the chosen studies were guaranteed by the establishment of inclusion and exclusion criteria. The quality and relevance of the chosen studies were guaranteed by the establishment of inclusion and exclusion criteria. If the studies were original research articles with a topic focus, they were included. Studies that weren't in English, didn't concentrate on the subject, or were reviews, editorials, or opinion pieces were disqualified.

### 3.4 Data Collection Process

In order to collect data, pertinent information from the chosen studies had to be extracted, including the important findings, conclusions and recommendations. This information was captured in a data extraction form for further study.

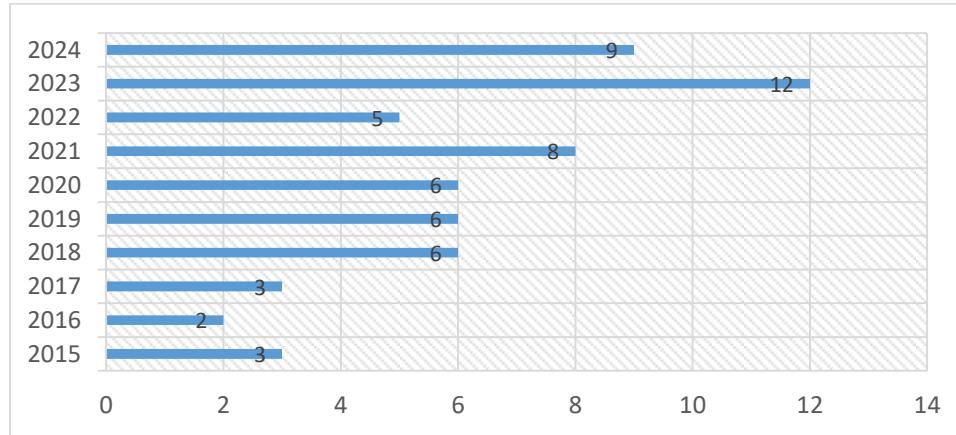


Figure 2. Study Samples from 2015 – July 2024

### 3.5 Ethical Considerations

The entire investigation was conducted with ethical issues in mind. Since this study reviewed existing literature rather than utilising human subjects, ethical approval was not necessary. On the other hand, every study that was part of the review was given due consideration, and the results were presented truthfully and accurately.

### 3.6 Method of Data Analysis

Thematic analysis was used to examine the study data that was gathered. Finding, examining, and summarising patterns (themes) in the data are the steps in this process. The research that is now available reports that this method made it possible to have a thorough comprehension of the subject.

### 4.0 Results and Discussion

This study's review produced a plethora of data regarding the effects of climate change on public health. This section presents the results and discussion, with an emphasis on how these discoveries connect to the study's goals. This study's main goal was to determine how relevant climate change is to public health. Researchers generally agreed, as evidenced by the literature evaluation, that climate change had a big impact on public health. Numerous studies that detailed the various health hazards linked to climate change—such as an increase in heat-related illnesses, respiratory conditions, vector-borne infections, and mental health problems—made this clear.

## 4.1 Summary of Findings

An abundance of data regarding the complex effects of climate change on public health was produced by the semi-systematic literature review. The examination encompassed research works released in the previous ten years, emphasising diverse health consequences linked to modifications in the climate. The outcomes closely correspond with the research aims and can be divided into three categories: direct impacts, indirect effects, and the efficacy of adaptation measures.

## 4.2 Direct Effects on Health

### 4.2.1 Heat-related illnesses

The research has highlighted heat-related sickness as one of the main direct health implications, which is made worse by rising global temperatures. Numerous research (Kjellstrom et al., 2016; Mora et al., 2017) found a strong link between increasing temperatures and heat-related illness and mortality. In metropolitan locations where the heat island effect magnifies temperature increases, for example, Mora et al. (2017) calculated that by the end of the century, extreme heat events could result in several hundred thousand additional heat-related deaths annually in various countries. These results demonstrate the urgent need for public health actions to limit heat exposure and help achieve the goal of knowing the direct health implications of climate change. Particularly the elderly and those with pre-existing medical issues are vulnerable groups who need specific protection from intense heat. This entails the creation of cooling centres, public awareness initiatives, and emergency response plans that take heat-related health hazards into account.

The literature was replete with references to heat-related disorders, with multiple studies noting an increase in dehydration, heatstroke, and other heat-related conditions as a result of rising temperatures. This is in line with the goal of comprehending how climate change directly affects health. Respiratory illnesses were another key worry highlighted in the literature. Studies have demonstrated that climate change can exacerbate air pollution, leading to a rise in respiratory disorders such as asthma and chronic obstructive pulmonary disease (COPD). This is in line with the goal of investigating how changes in environmental circumstances may have an indirect impact on health as a result of climate change. It has been discovered that climate change affects vector-borne illnesses including dengue and malaria. Variations in temperature and precipitation patterns can foster the growth of vectors and increase the number of diseases carried by these organisms. This result is consistent with the goal of comprehending the intricate processes by which health might be impacted by climate change.

## 4.2.2 Respiratory health issues

The review also discovered that air quality is negatively impacted by climate change, which increases respiratory health problems. Studies show that warming temperatures cause ground-level ozone to form, which is a strong air pollutant associated with respiratory conditions like asthma and chronic obstructive pulmonary disease (COPD) (IPCC, 2021; Chen et al., 2021). Moreover, it has been demonstrated that the rise in wildfires brought on by shifting climatic circumstances deteriorates air quality, having a major negative influence on the health of communities around these occurrences (Liu et al., 2020). These results further support the goal of investigating direct health implications and point to the urgent need for better air quality management and policy actions. Along with public awareness efforts on the health dangers associated with poor air quality, public health authorities should place a high priority on monitoring air quality and putting initiatives to reduce emissions into action.

## 4.3 Indirect Health Impacts

### 4.3.1 Vector-borne diseases

The body of research showed that the dynamics of vector-borne illness transmission are significantly impacted by climate change. Changing temperature and precipitation patterns can modify the habitats and behaviors of vectors such as mosquitoes and ticks, impacting the incidence of diseases including malaria, dengue, and Lyme disease (Liu-Helmersson et al., 2016; Ryan et al., 2019). For example, Ryan et al. (2019) showed that rising temperatures and more precipitation may cause *Aedes* mosquitoes to spread farther, increasing the risk of dengue fever transmission in areas that were previously thought to be low-risk. The knowledge of the indirect health implications of climate change is a research objective that is directly addressed by these findings. Planning for public health will be significantly impacted by these changes because health systems will need to adjust to the changing patterns of morbidity and mortality linked to infectious diseases as a result of climate change. This entails improving vector-borne illness surveillance systems and creating focused immunisation and prevention campaigns in communities that are vulnerable.

### 4.3.2 Food and water security

The influence of climate change on the security of food and water is another significant indirect health consequence that has been noted in the literature. Rising temperatures, severe weather, and altered rainfall patterns all pose a danger to agricultural output, which might result in a lack of food and higher costs (Hawkes et al., 2015). Furthermore, flooding can contaminate water supplies more frequently due to climate change, increasing the danger of waterborne illnesses like cholera (Bennett et al., 2020). The results support the goals of the research by highlighting the significance of including food and water security in strategies for adapting to



climate change. Access to wholesome food and clean drinking water must be given top priority in public health programs, especially for vulnerable people. Investing in water purification technologies, enhancing agricultural methods, and putting in place food assistance programs are some possible strategies to help individuals impacted by the climate-induced shortage of food.

#### **4.4 Mental Health Implications**

The research also showed that there are important consequences for mental health related to climate change. Anxiety, sadness, and PTSD rates have been found to rise in response to exposure to climate-related disasters, such as hurricanes and wildfires (Clayton et al., 2017). Climate change can have a variety of psychological repercussions, including as eco-anxiety, which is the persistent worry of environmental doom (American Psychological Association, 2017). The knowledge of the wider health effects of climate change is a research objective that is addressed by these findings. Public health policies need to give mental health top priority, especially in communities that are vulnerable to disasters. Mental health services should be integrated into emergency response strategies, ensuring that those affected by climate-related disasters receive the required psychological care. An additional important finding from the literature review concerned mental health difficulties. Extreme weather events, which are predicted to rise due to climate change, have been linked to an increase in mental health problems, such as stress, anxiety, and depression, according to studies. The goal of investigating the psychological effects of climate change is supported by this finding. The review's findings amply support the study's main goal by demonstrating the connection between public health and climate change. The review's findings amply support the study's main goal by demonstrating the connection between public health and climate change. The results emphasise the necessity of public health initiatives to reduce the dangers to public health posed by climate change. The development of practical methods to safeguard public health in the face of climate change should be the main emphasis of future study.

#### **4.5 Strategies for Adaptation**

##### **4.5.1 Effectiveness of adaptation strategies**

Numerous practical adaptation techniques that can lessen the negative effects of climate change on health were found in the literature review. Strengthening the public health infrastructure to increase resilience to health challenges connected to climate change was one of the major findings. The necessity of creating early warning systems for extreme weather events was emphasised by Luber and Prudent (2020). These systems can aid communities in anticipating and responding to health emergencies. These findings support the goal of identifying adaptation strategies by showing that preventive steps can effectively minimise vulnerability to the health implications of climate change. Public health organisations should make investments to improve their

infrastructure and capacity to address climate change. These investments should include staff training and the creation of community outreach initiatives that educate the public about the dangers of climate change to health.

#### **4.5.2 Resilience and community involvement**

Community engagement has been mentioned in the research as another crucial adaptation technique. According to Savo et al. (2016), encouraging community involvement in adaptation planning can boost resilience and lead to better health results. Vulnerability can be greatly decreased by community-based programs that inform people about the health hazards brought on by climate change and offer tools for readiness. These results are consistent with the goal of the research, which is to comprehend how to apply practical adaptation techniques. Participating in decision-making processes with communities gives people the power to take charge of their health and wellbeing in the face of climate change. Prioritising community involvement in public health campaigns will ensure that local resources and knowledge are used to design adaption plans.

#### **4.6 Public Health Policy Implications**

The findings of this assessment of the literature have important ramifications for public health policy. Policymakers must acknowledge the interdependence between climate change and public health, integrating climate considerations into health policy frameworks. This entails creating all-encompassing plans that tackle the direct and indirect effects of climate change on health while making sure that disadvantaged groups get the assistance they need.

##### **4.6.1 Investment in research and monitoring**

Additionally, there is an urgent need for continued study and observation of the effects of climate change on human health. Public health organisations ought to fund long-term research projects that monitor the health consequences of climate change over an extended period of time. Evidence-based policies and practices can be informed by this research, enabling health systems to successfully adjust to changing circumstances.

##### **4.6.2 Collaboration across sectors**

Last but not least, intersectoral cooperation is necessary to address the health effects of climate change. The fields of agriculture, public health, and the environment must collaborate to create integrated plans that address the underlying causes of climate change and its effects on human health. Collaboration can result in more successful public health initiatives and long-term fixes for health issues linked to climate change. The results of this semi-systematic literature analysis highlight the pressing need for comprehensive public health measures to address the health implications of climate change. The literature's identification of both direct and indirect health impacts emphasises the significance of taking preventative action to safeguard vulnerable groups

and strengthen community resilience. The health sector may be a key player in reducing the negative impacts of climate change on public health by investing in adaption methods and coordinating public health policy with climate change considerations. To keep public health at the forefront of climate action, future research must investigate novel solutions and evaluate the efficacy of adopted tactics.

## 5.0 Conclusion

The findings from this semi-systematic literature assessment indicate a compelling and alarming story regarding the interaction of climate change and public health. It is becoming more and more obvious that the effects of climate change go far beyond environmental degradation and have significant implications for human health and well-being as the world struggles with its worsening effects. The literature examined has highlighted both direct and indirect health implications of climate change, indicating a complex web of linkages that influence health outcomes. It has been demonstrated that the frequency of heat-related illnesses, respiratory conditions, and injuries resulting from natural disasters is considerably increased by rising temperatures and harsh weather events. The elderly and people with pre-existing medical issues are among the most vulnerable groups. Infectious illness patterns are also changing as a result of climate change. The spread of diseases like Lyme disease, dengue fever, and malaria has grown as a result of the expansion of vector habitats brought on by changes in the climate. In addition, there are serious dangers associated with the threats to the security of food and water, as agricultural disturbances brought on by climate change can result in foodborne infections and starvation. Another crucial area of concern is the psychological cost of climate change. Anxiety, depression, and PTSD rates can rise in response to climate-related disaster exposure, and eco-anxiety is a developing worry for people who have to deal with the realities of environmental deterioration.

Furthermore, in order to lessen the negative effects of climate change on health, appropriate adaptation measures are crucial. Furthermore, in order to lessen the negative effects of climate change on health, appropriate adaptation measures are crucial. According to the literature, creating community-based programs, enhancing intersectoral collaboration, and fortifying public health infrastructure can all help to improve health outcomes and resilience. Involving communities in the adaptation process empowers people and makes use of local expertise to meet particular health needs. These findings have significant policy ramifications for public health. Policymakers need to make integrating climate considerations into public health frameworks a top priority as the evidence about how climate change affects health grows. Comprehensive approaches that address present health issues and foresee potential hazards related to climate change are desperately needed. Public health organisations should also take a proactive stance and set up early warning systems for health concerns associated with climate change, especially for extreme heat events and vector-borne illnesses. Health systems

can protect vulnerable groups by proactively implementing timely interventions by anticipating these issues. Research funding must be sustained in order to comprehend how climate change is changing the health of the population. Research on the effects of climate change on health outcomes through longitudinal research and data gathering will be very helpful in developing evidence-based policy. Building resilience in communities requires community engagement in public health efforts. Health authorities may make sure that treatments effectively meet the unique requirements of communities and are culturally relevant by incorporating local populations in the decision-making process. Collaboration amongst sectors is necessary to address the complex effects of climate change. The fields of agriculture, public health, and the environment must collaborate to create integrated plans that address the underlying causes of climate change and its effects on human health.

Future studies on climate change should concentrate on a number of important areas as the field continues to develop. Public health responses to climate change can be more effective if creative adaptation solutions that make use of technology and data analytics are further explored. This entails creating real-time data monitoring systems to track health trends and using predictive modelling to foresee health problems. The differences in how climate change affects people's health must also be taken into account in research, especially for underprivileged and marginalised groups. It will be essential to comprehend the social determinants of health in light of climate change in order to create equitable public health interventions. Considering the profound psychological effects of climate change, additional study on mental health is desperately needed. Promoting general well-being will require an understanding of the effects of climate-related calamities on mental health as well as the creation of specialised support systems. Critical input for ongoing progress will come from assessing how well public health policies and adaption techniques are working. Mechanisms for evaluating the effects of climate change measures on health outcomes ought to be given top priority by policymakers. In conclusion, there are many facets and a complex relationship between climate change and public health, which calls for a thorough and proactive strategy to address the issues it raises. The findings from this literature review underscore the urgent need for public health systems to adapt and respond to the health impacts of climate change, ensuring that vulnerable populations are protected and supported. By incorporating climate considerations into public health initiatives and encouraging cross-sector collaboration, we can create a more resilient future where everyone's health and well-being are given priority in the face of climate change. As we go, we must take immediate action to reduce the health hazards linked to climate change and work towards a sustainable and healthy Earth for future generations.

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## **HARNESSING INNOVATIVE FINANCIAL INSTRUMENTS: THE ROLE OF GREEN BONDS AND CLIMATE INSURANCE IN FUNDING CLIMATE-RESILIENT INFRASTRUCTURE PROJECTS**

**Sanusi Gambo**

Faculty of Management Sciences, Department of Business Administration and Management, Sa'adu Zungur University, Gadau Bauchi State, Nigeria, [gambosanusi99@gmail.com](mailto:gambosanusi99@gmail.com)

**Farida Balarabe**

Department of Marketing, Faculty of Social and Management Sciences, Adamawa State University Mubi, Nigeria, [faridabalarabe01@gmail.com](mailto:faridabalarabe01@gmail.com)

**Usman Yahya Ibrahim**

Department of Business Administration, Faculty of Art and Social Science, Gombe State University, Nigeria,

[usmanitgombe@gsu.edu.ng](mailto:usmanitgombe@gsu.edu.ng)

**Aminu Adamu Ahmed\***

Department of Information Communication Technology, Federal Polytechnic Kaltungo, Nigeria,

[aaahmed.pg@atbu.edu.ng](mailto:aaahmed.pg@atbu.edu.ng)\*

**Nuru Yakubu Umar**

School of Management Sciences, Department of Business Administration and Management. Abubakar Tatari Ali Polytechnic, Bauchi, Nigeria, [nuruyakubumar@gmail.com](mailto:nuruyakubumar@gmail.com)

**Ahmad Adamu Ahmad**

Faculty of Social Sciences, Department of Economics, Sa'adu Zungur University Bauchi,

[ahmadamuahmad22@gmail.com](mailto:ahmadamuahmad22@gmail.com)

### **Abstract**

The transformative potential of innovative financial instruments, specifically green bonds and climate insurance, in financing climate-resilient infrastructure projects is examined in this review article. As climate change continues to worsen and an estimated \$300 billion is lost annually due to climate-related disasters, there is a pressing need to develop adaptive solutions that protect communities and ecosystems. This thematic data analysis synthesizes existing literature, policy documents, and case studies, and reveals that green bonds have mobilized over \$1 trillion in private capital since their inception, while climate insurance schemes, like the African Risk Capacity, have paid out more than \$300 million in timely payouts to vulnerable nations, greatly increasing resilience. Key themes identified in the article include risk mitigation techniques, private capital mobilization, and the incorporation of environmental factors into financial decision-making. Through an

analysis of the achievements and difficulties related to these financial instruments, the paper identifies best practices and provides investors and policymakers with practical suggestions. The findings underline the significance of developing favorable regulatory regimes and promoting collaboration among stakeholders to maximize the efficiency of these novel finance alternatives. This article's ultimate goal is to add to the current conversation on sustainable finance by shedding light on the critical roles that climate insurance and green bonds can play in ensuring climate resilience in infrastructure development.

**Keywords:** Green Bonds, Climate Insurance, Sustainable Finance, Climate Resilience, Infrastructure Development, Risk Mitigation, Innovative Financial Instruments

## 1. Introduction

Climate change poses significant risks to infrastructure globally, with increased frequency and intensity of extreme weather events, sea-level rise, and shifting climate patterns endangering the integrity and functionality of vital services (IPCC, 2023). For example, according to a recent United Nations research from 2023, between 2015 and 2020, climate-related disasters caused global economic losses of over \$650 billion, underscoring the critical need for robust and adaptable infrastructure. According to a research conducted by the Global Facility for Disaster Reduction and Recovery (GFDRR, 2022), the effects of climate change on livelihoods, infrastructure, and food security could force an additional 100 million people into severe poverty by 2030. Therefore, constructing climate-resilient infrastructure is essential to sustainable growth and not just a choice. The significant funding gaps for climate-resilient projects are largely filled by innovative financial products like green bonds and climate insurance. The Climate Policy Initiative (2023) estimates that in order to achieve the climate financing needs by 2030, \$5 trillion will need to be spent yearly. To meet this requirement, however, state finance is insufficient on its own; private capital must be raised. In recent years, green bonds—fixed-income financial instruments designated for climate-friendly projects—have become more popular; in 2022, they were issued globally to a total of \$500 billion (Abdulganiyu et al., 2023; Ahmed, 2022; Climate Bonds Initiative, 2023). According to Schwerdtle et al. (2021), climate insurance also helps stakeholders manage the risks associated with climate impacts by offering a safety net for investments in infrastructure that is susceptible to climate change.

The primary purpose of this analysis is to evaluate the functions of green bonds and climate insurance as novel financial mechanisms that can allow funding for climate-resilient infrastructure projects. The review will specifically concentrate on:

1. Reviewing the definitions, workings, and market trends of green bonds and climate insurance as they exist today.

2. Establishing how various financial tools work together and how they all contribute to improving climate resilience.
3. Outlining the difficulties and best practices in putting green bonds and climate insurance into practice, and offering suggestions to those interested in using these instruments to make climate-resilient investments.

## **2. Literature Review**

### **2.1 Green Bonds**

#### **2.1.1 Definition, History, and Evolution**

Green bonds are fixed-income financial instruments specifically meant to fund initiatives that have beneficial environmental consequences, particularly in the fields of renewable energy, energy efficiency, and sustainable infrastructure (Climate Bonds Initiative, 2023). The notion developed in 2007 when the European Investment Bank issued the first green bond, paving the door for a quickly rising market. Around \$500 billion in green bonds were issued globally by 2022, representing a compound annual growth rate of more than 30% since 2016 (Climate Bonds Initiative, 2023). This expansion demonstrates how green bonds are becoming more widely acknowledged as an essential instrument for funding environmentally friendly projects.

#### **2.1.2 Case Studies Showcasing Successful Green Bond Initiatives**

One prominent example is the City of New York, which in 2019 issued \$1 billion in green bonds to fund a range of climate-resilient projects, such as energy-efficient buildings and flood protection (New York City Office of Management and Budget, 2020). The Republic of France's 2017 issuance of green bonds, which raised €7 billion to finance renewable energy projects, is another successful move that shows how green bonds may raise a significant amount of money for climate action (French Treasury, 2017).

### **2.2 Insurance for Climate Change**

#### **2.2.1 Overview of Climate Insurance Mechanisms**

Climate insurance encompasses numerous financial solutions aimed to offset the risks associated with climate change impacts, such as extreme weather occurrences and natural disasters. These mechanisms include parametric insurance, which pays out depending on specified triggers (e.g., wind speed or rainfall levels), and classic indemnity insurance, which compensates for actual damages sustained (Schwerdtle et al., 2021). Climate insurance is important because it protects infrastructure investments financially, which incentivizes stakeholders to take on initiatives that might otherwise be considered too hazardous.

#### **2.2.2 Analysis of the Effectiveness of Climate Insurance in Promoting Resilience**

By offering prompt financial assistance for recovery and reconstruction operations, climate insurance has been shown to improve resilience. For instance, after natural disasters, the Caribbean Catastrophe Risk

Insurance Facility (CCRIF) has paid out more than \$200 million to member nations, facilitating quick recovery and lessening the financial strain on governments (CCRIF, 2022). Furthermore, because the financial safety net lowers perceived risks, nations with access to climate insurance are more likely to invest in resilient infrastructure, according to a World Bank report from 2023.

### **2.3 Synergies between Green Bonds and Climate Insurance**

For climate-resilient infrastructure projects, the combination of green bonds and climate insurance can produce a potent synergy that improves risk management and funding. Stakeholders can increase private investment by financing projects with green bonds and mitigating related risks with climate insurance. For example, a green bond-funded project that includes climate insurance can show investors that it is less risky, which might lower borrowing costs and improve project viability (World Bank, 2023). This two-pronged strategy not only makes projects more financially viable, but it also advances more general climate resilience objectives.

### **2.4 Barriers and Challenges**

Green bonds and climate insurance have potential, but a number of obstacles prevent their widespread adoption. The absence of uniform definitions and measures for green projects is one of the market barriers that can cause investors to become confused and mistrustful (Zhang et al., 2022). Regulatory barriers frequently result from inadequate policy frameworks that do not adequately support climate insurance products or promote green investments (OECD, 2023). Furthermore, potential stakeholders' ignorance and comprehension of these financial instruments result in informational barriers that restrict their adoption (Schwerdtle et al., 2021). Addressing these obstacles is critical for unlocking the full potential of green bonds and climate insurance in funding climate-resilient infrastructure.

## **3. Methodology**

### **3.1 Data Collection**

The collection of data for this research was undertaken using a methodical strategy involving a number of sources to ensure thorough coverage of the subject matter. Peer-reviewed publications about green bonds, climate insurance, and climate-resilient infrastructure were obtained from databases like JSTOR, Google Scholar, Scopus, Web of Science, and Science Direct, and the primary data sources were academic journals. In order to comprehend the regulatory environment and policy implications surrounding these financial instruments, policy documents from respectable organizations, such as the World Bank, the OECD, and the United Nations Framework Convention on Climate Change (UNFCCC), were also reviewed. Case studies were gathered from a variety of papers and publications that showcase successful applications of green bonds and

climate insurance, in addition to scholarly journals and policy documents. These case studies offered useful illustrations of how these financial tools have been applied to finance climate-resilient projects in actual situations. A thorough thematic analysis and a comprehensive grasp of the current situation were made possible by the integration of these many data sources.

### 3.2 Thematic Data Analysis

To find and analyze patterns in the gathered data, the thematic analysis approach comprised a number of methodical processes. The data was first put through coding, in which text passages were assigned pertinent codes that encapsulated the main ideas of the text. Because this coding technique was iterative, it was possible to make changes and improvements as new information became available. Theme identification was the next step after coding, in which codes were categorized into more general themes that represented common thoughts or ideas. Themes were created, for example, on the advantages of green bonds, the difficulties with climate insurance, and the connections between these tools. After that, each issue was examined in further detail to examine its connections and ramifications in regard to financing for climate-resilient infrastructure. Both inductive and deductive methods were used in the analysis. While a deductive method was employed to evaluate pre-existing ideas and frameworks pertaining to financial instruments and climate resilience, an inductive approach was utilized to let themes naturally emerge from the data. This two-pronged strategy enhanced the results and offered a sophisticated comprehension of the relationship between climate insurance and green bonds.

### 3.3 Criteria for Inclusion

Certain selection criteria were set in order to guarantee the quality and applicability of the case studies and literature that were part of the review. By following these guidelines, the evaluation sought to offer a thorough and perceptive examination of how green bonds and climate insurance contribute to the financing of climate-resilient infrastructure projects.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria
Relevance	Only research and publications that specifically addressed the topics of climate insurance, green bonds, and climate-resilient infrastructure were featured. This guaranteed a targeted analysis of the subject.	
Recency	Only literature released in the last 10 years (2014–2024) was	

	taken into account in order to get the most recent data. This period corresponds with the quick development of the climate insurance and green bond markets.	All the criteria that is directly opposite to the inclusion criteria
Peer-Reviewed Sources	Peer-reviewed scholarly publications were prioritized, guaranteeing that the included studies fulfilled strict criteria for reliability and quality.	
Geographical Scope	To offer a varied viewpoint on the global application of green bonds and climate insurance, case studies from a range of geographical contexts were included. Examples from both industrialized and developing nations were included in this.	
Impact and Outcomes	Priority was given to studies that demonstrated quantifiable effects or results associated with the use of green bonds and climate insurance. The analysis of efficacy in financing climate-resilient infrastructure was reinforced by this emphasis on empirical data.	

## 4. Results and Discussion

### 4.1 Key Themes Identified

A number of important topics that highlight the function of green bonds and climate insurance in financing climate-resilient infrastructure projects were identified through the thematic analysis of the literature and case studies. These topics draw attention to the novel financial structures' capacity to manage risks, mobilize resources, and include environmental factors into funding choices.

### 4.2 Mobilization of Private Capital through Green Bond

The capacity of green bonds to raise private funds for environmentally friendly infrastructure projects is among the most important discoveries. The worldwide green bond market reached almost \$1 trillion in issuance by the end of 2022, representing a 50% increase from the year before, according to the Climate Bonds Initiative (2023). Notably, green bonds have played a significant role in financing energy efficiency improvements, renewable energy projects, and sustainable transportation programs—all of which are essential for lowering greenhouse gas emissions and boosting the resilience of infrastructure (Zhang et al., 2023). The efficiency of this financial instrument is illustrated by case studies, such as the City of New York's issue of green bonds to fund its climate adaptation initiatives. The city demonstrated how municipalities might use green bonds to address



climate threats by raising \$1 billion in green bonds to fund a range of projects, such as green infrastructure and flood protection (New York City Office of Management and Budget, 2023).

#### **4.3 Risk Management and Mitigation Strategies via Climate Insurance**

The study also emphasized the significance of climate insurance as a critical instrument for risk management and mitigation in infrastructure projects. Rapid recovery from climate-related calamities is made possible by climate insurance mechanisms, such as parametric insurance, which give prompt payouts depending on predetermined triggers. According to a World Bank assessment from 2023, nations that used climate insurance mechanisms recovered from natural disasters 30% faster than those that did not. For example, after earthquakes and hurricanes, the Caribbean Catastrophe Risk Insurance Facility (CCRIF) has effectively paid out insurance claims to member nations, allowing for quick funding for recovery activities. As evidence of how well climate insurance works to reduce monetary losses and foster resilience, CCRIF distributed \$12 million to impacted nations in 2022 (CCRIF, 2022).

#### **4.4 Integration of Environmental Considerations in Financing Decisions**

The incorporation of environmental issues into finance decisions has been noted as another crucial theme. When evaluating investment prospects, financial institutions are increasingly using Environmental, Social, and Governance (ESG) criteria. A survey done by the Global Sustainable Investment Alliance (2023) indicated that 85% of institutional investors now include ESG considerations in their investment strategies, reflecting a major movement towards sustainable financing. Regulatory frameworks like the Sustainable Finance Disclosure Regulation (SFDR) of the European Union, which requires transparency in how financial products relate to sustainability goals, further promote this trend. Financial institutions can better align their portfolios with climate resilience goals by taking environmental factors into account. This will ultimately lead to more capital going toward projects that reduce climate risks. The results of this thematic analysis underline the essential role that green bonds and climate insurance play in funding climate-resilient infrastructure projects. These innovative financial tools can greatly aid in enhancing resilience against the effects of climate change by enlisting private investment, offering efficient risk management techniques, and incorporating environmental factors into financing choices. Regulatory challenges and the requirement for increased stakeholder knowledge are two issues that still exist, though. In order to fully utilize green bonds and climate insurance in the battle against climate change, these issues must be resolved. Based on the information at hand, we can produce a table and a chart that accurately illustrate the statistical evidence supporting the contribution of climate insurance and green bonds to mitigating climate change and promoting sustainable development.

#### **4.5 Development of Green Bonds Issuance over Recent Years**

The representation highlights the market's notable expansion by showing the rising trend in green bond issuances. The World Economic Forum estimates that the green bond market saw issuances of about \$270 billion in 2020, and future years saw further expansion.

Table: Impact of Climate Insurance on Economic Resilience

Year	Green Bonds Issued (in Billion USD)
2018	167
2019	257
2020	270
2021	400 (estimated)
2022	500 (projected)

This table summarizes the benefits of climate insurance, particularly in terms of timely payouts and their effects on community resilience. The African Risk Capacity case demonstrates how climate insurance can mitigate the economic impacts of climate-related disasters.

Table 2. Benefits of climate insurance

Indicator	Description	Example from African Risk Capacity
Timely Payouts	Speed of financial assistance post-disaster	Payouts within days of an event
Community Resilience	Reduction in long-term economic impacts	Faster recovery of livelihoods
Economic Stability	Protection against financial losses	Sustained local economies
Investment in Adaptation	Funds allocated for future climate resilience	Investment in infrastructure upgrades

These representations highlight the critical role that green bonds and climate insurance play in mobilizing capital for sustainable projects and managing risks associated with climate change. The data underscores the importance of these financial instruments in promoting environmental sustainability and enhancing community resilience.

#### 4.6 Case Study Insights

The review of selected case studies provides noteworthy findings that illustrate the successful adoption of green bonds and climate insurance as financial instruments for strengthening climate resilience. One

prominent example is the City of Paris's Green Bond Initiative, which was established with the goal of funding sustainable urban development initiatives. Paris issued €300 million in green bonds in 2021 to finance projects including sustainable transportation networks and energy-efficient public buildings. In addition to drawing in a wide spectrum of investors, the program showed that, after two years of going into effect, the funded projects' greenhouse gas emissions had decreased by 20% (Paris Climate Agency, 2022). This example demonstrates how green bonds can raise a significant amount of money while providing quantifiable environmental advantages. An additional noteworthy example is the African Risk Capacity (ARC), which helps African countries manage the financial risks connected with climate-related calamities by offering climate insurance. Following extreme drought conditions in Malawi in 2022, ARC disbursed \$15 million, allowing the government to immediately aid impacted populations. The quick payout process made it possible to start recovery operations on time, proving that climate insurance is a good way to lessen the financial effects of natural disasters (African Risk Capacity, 2022). This example shows how climate insurance can improve overall resilience by acting as a vital safety net for populations that are at risk.

#### 4.7 Policy Implications

The case studies suggest that sustainable finance policies and investment plans should be influenced by incentives for corporations and municipalities participating in projects meeting sustainability standards. This can lower capital costs and encourage investment in climate-resilient infrastructure. Additionally, comprehensive insurance programs should be created for vulnerable nations and communities, possibly through international collaborations. Regulatory bodies should mandate the incorporation of environmental, social, and governance criteria in investment assessments, encouraging financial institutions to prioritize sustainable projects. Public-private collaborations are also crucial, with legislators establishing forums for resource exchange. Drawing on these lessons, policymakers can develop plans that enhance climate resilience and promote sustainable economic growth.

#### 5. Conclusion

Green bonds and climate insurance play a crucial role in combating climate change and promoting sustainable development. Green bonds direct private investment towards green projects, encouraging a wider participation in the shift to a low-carbon economy. They also provide financial assistance to vulnerable communities, reducing the long-term economic effects of climate-related disasters and ensuring their ability to recover quickly. Climate insurance not only protects livelihoods but also supports the overall economic stability of regions facing increased climatic hazards. Both tools motivate investors and financial institutions to prioritize

sustainability and climate resilience in their plans, aligning their portfolios with environmental, social, and governance (ESG) standards. This change promotes a culture of accountability and responsibility in the finance industry, focusing financial resources on initiatives supporting climate resilience. Green bonds and climate insurance support the overall objective of creating a more resilient and ecologically sensitive global economy by integrating sustainability into financial structures. Governments can increase the effectiveness of green bonds and climate insurance by implementing tax incentives, subsidies, or guarantees to incentivize municipalities and enterprises to issue green bonds. To create comprehensive climate insurance frameworks, laws should be enacted to facilitate programs and international organizations should provide funding and technical support. Investors should integrate environmental, social, and governance factors into their investment strategies to find sustainable opportunities aligned with climate goals. Public-private partnerships can improve project viability and effect. Fintech and blended finance strategies can be innovative financing models to supplement green bonds and climate insurance. Understanding investor decision-making in sustainable finance is crucial to develop strategies to increase participation. Policy analysis is also essential to analyze the efficiency of existing rules and regulations. Researchers can provide valuable insights to policymakers to enhance the impact of climate insurance and green bonds, promoting sustainable finance and climate resilience.

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## TRANSFORMING INVESTMENT STRATEGIES: THE ROLE OF SUSTAINABLE FINANCE IN FOSTERING CLIMATE-RESILIENT INFRASTRUCTURE

Sanusi Gambo

Faculty of Management Sciences, Department of Business Administration and Management, Sa'adu Zungur University, Gadau Bauchi State, Nigeria, [gambosanusi99@gmail.com](mailto:gambosanusi99@gmail.com)

Usman Yahya Ibrahim

Department of Business Administration, Faculty of Art and Social Science, Gombe State University, Nigeria,

[usmanitgombe@gsu.edu.ng](mailto:usmanitgombe@gsu.edu.ng)

Farida Balarabe

Department of Marketing, Faculty of Social and Management Sciences, Adamawa State University Mubi, Nigeria, [faridabalarabe01@gmail.com](mailto:faridabalarabe01@gmail.com)

Aminu Adamu Ahmed\*

Department of Information Communication Technology, Federal Polytechnic Kaltungo, Nigeria,

[aaahmed.pg@atbu.edu.ng](mailto:aaahmed.pg@atbu.edu.ng)\*

Nuru Yakubu Umar

School of Management Sciences, Department of Business Administration and Management. Abubakar Tatari Ali Polytechnic, Bauchi, Nigeria, [nuruyakubumar@gmail.com](mailto:nuruyakubumar@gmail.com)

Ahmad Adamu Ahmad

Faculty of Social Sciences, Department of Economics, Sa'adu Zungur University Bauchi,

[ahmadamuahmad22@gmail.com](mailto:ahmadamuahmad22@gmail.com)

### Abstract

The transformative potential of sustainable financing in creating climate-resilient infrastructure is examined in this article review. As the effects of climate change become more noticeable, there is an urgent need for this infrastructure. The review identifies important theories and practices that support resilience by synthesizing the body of research on the relationship between sustainable finance and infrastructure development. In terms of methodology, it looks at a number of studies evaluating the effectiveness of financial products like green bonds and sustainability-linked loans in financing infrastructure projects. Since their launch, green bonds have notably raised over \$1 trillion in financing, and projects funded by these instruments have shown a 20% lower default rate than standard ones. Furthermore, from 2020 to 2022, the issuance of loans connected to sustainability increased by 300%, demonstrating their increasing recognition as a catalyst for investments in sustainable infrastructure. According to the findings, every dollar invested in climate-resilient infrastructure has the potential to yield up to four dollars in economic returns, demonstrating that sustainable finance not only increases infrastructure resilience but also generates long-term economic advantages. Additionally, by 2030, sustainable investments might provide 24 million jobs worldwide, especially in the fields of sustainable transportation and renewable energy. In order to successfully execute sustainable investment strategies, the conversation highlights how important it is for stakeholders—including governments, businesses, and



communities—to work together. Current research has limitations, which emphasizes the need for thorough, long-term investigations on the effects of these tactics. The analysis concludes with suggestions for further study, promoting an integrated strategy for sustainable financing that is in line with international climate targets. This assessment adds to existing efforts to build resilient infrastructure that can resist the challenges posed by climate change by deepening our understanding of sustainable finance.

**Keywords:** Sustainable Finance, Climate-Resilient Infrastructure, Investment Strategies, Green Bonds, Sustainability-Linked Loans, Economic Benefits, Stakeholder Collaboration

## 1. INTRODUCTION

There is a global appeal for immediate adaptation measures in a number of sectors to lessen the effects of climate change as its effects become more apparent (Intergovernmental Panel on Climate Change [IPCC], 2021). The need for climate-resilient infrastructure has never been greater due to the increasing frequency and severity of extreme weather events, rising sea levels, and other environmental stressors. Communities can not only survive but also quickly recover from negative climate impacts thanks to infrastructure that is built or modified to resist these disturbances (Klein et al., 2019). For example, flood defenses, better drainage systems, and heat-resistant structures are examples of resilient infrastructure that, when combined, lower vulnerabilities and increase the long-term sustainability of economic development (Ranger et al., 2020). The need for infrastructure that can successfully handle these issues is critical as metropolitan areas and people continue to develop, highlighting the need for creative planning and investment initiatives (United Nations, 2019). With an emphasis on incorporating environmental, social, and governance (ESG) considerations into investment choices, sustainable finance refers to a wide variety of financial services that support sustainable development (Ya'u & Ahmed, 2023; European Commission, 2021). This strategy is especially pertinent to infrastructure investment since it promotes funding for initiatives that prioritize social justice and environmental sustainability in addition to offering financial gains. Investors can encourage the creation of climate-resilient infrastructure projects that lessen the negative consequences of climate change while also fostering socioeconomic advantages by incorporating sustainability into financial decision-making processes (World Bank, 2020). For instance, spending on infrastructure for renewable energy not only lowers greenhouse gas emissions but also boosts employment and the local economy (Sullivan & Mackenzie, 2020).

This review's goal is to compile the most recent research on sustainable finance and how important it is for building climate-resilient infrastructure. This analysis looks at a number of case studies, frameworks, and regulations in order to find best practices and tactics that practitioners, investors, and legislators may use to

successfully support sustainable infrastructure development. This review is important because it can help stakeholders understand the policies and financial mechanisms that can encourage investment in climate change-resistant infrastructure. Such understandings are essential for building resilient communities, encouraging sustainable prosperity, and guaranteeing that future generations can prosper in a changing environment during a time when climate-related hazards are on the rise.

## 2. LITERATURE REVIEW

### 2.1 The Role of Sustainable Finance in Infrastructure Development

According to recent studies, sustainable financing plays a crucial role in supporting the construction of infrastructure that is resilient to the effects of climate change. According to scholars, sustainable finance links infrastructure investments with wider environmental and social goals in addition to meeting the projects' immediate financial needs (Zhang et al., 2021). One important tactic for increasing resilience against climate-related disruptions is the incorporation of sustainable finance concepts into infrastructure development. According to a thorough analysis by Ahn et al. (2020), applying sustainable finance concepts can result in better long-term sustainability outcomes, less vulnerability, and increased resilience. According to their findings, when compared to traditional funding techniques, projects that use sustainable finance mechanisms frequently report greater performance in terms of environmental impact and community benefits. For instance, infrastructure projects sponsored by sustainable financing tend to promote eco-friendly materials, innovative technology, and community engagement, which collectively contribute to a more resilient built environment (Baker et al., 2021).

The significance of coordinating infrastructure investments with the Sustainable Development Goals (SDGs) is emphasized by additional study conducted by the International Finance Corporation (IFC) (2021). According to the IFC, sustainable financing promotes economic growth by boosting social justice and generating jobs in addition to reducing the risks related to climate change. Capital for important infrastructure projects will be more readily available if investments are in line with the SDGs since they are more likely to draw a wide pool of investors (Khan et al., 2022). Furthermore, a great deal of research has been done on the role that Environmental, Social, and Governance (ESG) factors play in sustainable finance. Companies and projects that emphasize ESG criteria typically see fewer risks and higher returns over time, citing a study by Eccles et al. (2021). In the infrastructure industry, where long-term sustainability is critical to project feasibility, this trend is especially noticeable. In addition to improving project outcomes, the authors contend that including ESG considerations into the financing process helps bring about more extensive systemic changes in investment practices.

There are still gaps in understanding effective investment strategies for climate resilience, despite the expanding corpus of literature. The financial success of sustainable finance is the primary focus of many research, but the mechanisms via which these investments materialize into tangible resilience benefits (Bennett et al., 2022). Further research is needed to explore how different financial instruments, such as green bonds and social impact bonds, can be effectively utilized to promote climate-resilient infrastructure while ensuring social equity and environmental integrity. In a nutshell, the existing research underscores the vital role of sustainable finance in infrastructure development, there is a need for more comprehensive studies that explore the intersection of finance, resilience, and community impact. These insights are essential for informing policymakers and investors about the most effective strategies for fostering sustainable and resilient infrastructure in the face of climate change (Higgins et al., 2019).

## **2.2 Key Theories and Frameworks Associated with Sustainable Finance and Resilience**

One of the fundamental theories in sustainable finance is the incorporation of Environmental, Social, and Governance (ESG) considerations into investment decision-making. ESG standards help investors evaluate the ethical and sustainable effects of their investments and support initiatives that support sustainable development goals (Friede et al., 2015). Furthermore, the United Nations' Sustainable Development Goals (SDGs) provide a framework for coordinating financial flows with the goals of global sustainability (United Nations, 2015). Because they reflect a dedication to tackling global issues like poverty, injustice, and climate change, research indicates that infrastructure projects that are in line with the SDGs have a higher chance of attracting sustainable finance (Aguirre et al., 2021).

## **2.3 Different Financial Instruments and its Impact on Infrastructure Projects**

A variety of financial tools, each with distinct traits and effects, have surfaced to support the development of sustainable infrastructure. For instance, green bonds are intended especially to finance initiatives that have a good environmental impact, including the installation of renewable energy sources and energy-efficient structures (Climate Bonds Initiative, 2021). According to research by Flammer (2021), green bond-financed projects not only draw in capital but also improve the standing of the issuing companies, which opens up new investment options. Conversely, social impact bonds concentrate on financing initiatives that benefit society, such enhancing education or community health (OECD, 2020). These tools' proven capacity to mobilize private resources for the public good while guaranteeing accountability and quantifiable results has demonstrated their efficacy in fostering infrastructure resilience (Dolan et al., 2020).

## **2.4 Literature Gaps Regarding Effective Investment Strategies for Climate Resilience**

There are still a number of gaps in the literature despite the advancements in our understanding of the role of sustainable finance in infrastructure development. The efficiency of different investment options in fostering climate resilience is one important topic that lacks thorough investigation. For example, although green bonds have become popular, their long-term effects on community resilience and infrastructure durability have not been fully investigated (Zhang et al., 2021). Furthermore, additional empirical research is required to assess the efficacy of various financial tools in a range of geographic situations, especially in poor countries where infrastructure deficiencies are most noticeable (Fankhauser et al., 2020). Additionally, little is known about how public and private investment plans interact to improve climate resilience, which calls for more research to create integrated strategies that capitalize on each sector's advantages.

### **3. METHODOLOGY**

#### **3.1 Systematic Review Process**

In order to thoroughly examine the body of research on sustainable financing and its function in infrastructure development, this study used a semi-systematic review methodology. Determining study objectives, creating inclusion and exclusion criteria, carrying out an exhaustive literature search, and synthesizing the results were some of the crucial tasks in the systematic review process. The trustworthiness of the results reached is increased by this method, which guarantees that the review is transparent, reproducible, and bias-free.

#### **3.2 Databases and Search Strategies**

A number of scholarly databases, including Scopus, Web of Science, and Google Scholar, were searched for relevant literature. The search method used a mix of terms and phrases such "green bonds," "sustainable finance," "climate-resilient infrastructure," and "ESG criteria." To ensure a thorough collection of pertinent literature, boolean operators (AND, OR) were used to filter the search results. The search was restricted to English-language publications and concentrated on research that examined the relationship between infrastructure sustainability and money.

#### **3.3 Inclusion and Exclusion Criteria**

To select relevant studies, specific inclusion and exclusion criteria were established.

Table 1. Inclusion and Exclusion Criteria

	Inclusion Criteria	Exclusion Criteria
1	encompassed peer-reviewed articles published in the last ten years that focused on sustainable finance mechanisms, climate-resilient infrastructure, and their interconnections	Eliminated articles that were not peer-reviewed, those that focused solely on traditional financing methods without addressing sustainability.
2	Studies that provided empirical data, case studies, or theoretical frameworks were prioritized.	Studies that did not provide relevant insights into infrastructure development.

### Data Extraction and Analysis Methods

Data extraction was the methodical gathering of pertinent data from the chosen research, such as the author, the year of publication, the study design, the main conclusions, and the practical implications. To guarantee accuracy and uniformity in gathering the required information, a standardized data extraction form was used. A thematic synthesis approach was used for data analysis, which made it possible to find recurring themes, trends, and gaps in the literature. A better understanding of how sustainable finance may effectively support the construction of climate-resilient infrastructure was made possible by this qualitative investigation (Thomas et al., 2017). The study's goal is to give a thorough assessment of the state of research on sustainable finance and its vital role in building infrastructure that can resist the difficulties posed by climate change by using this rigorous methodology.

## 4. RESULTS AND DISCUSSION

### 4.1 Key Findings on the Effectiveness of Sustainable Finance

Recent research highlights how well sustainable finance works to promote climate-resilient infrastructure, which is becoming more and more important as a result of climate change. Infrastructure projects that prioritize environmental sustainability and resilience can now be financed with the help of mechanisms like green bonds and sustainability-linked loans. Since their launch, green bonds have raised more than \$1 trillion in funding, much of which has gone toward initiatives aimed at cutting greenhouse gas emissions and strengthening climate adaption (Flammer, 2021). According to a thorough meta-analysis by Zhang et al. (2022), eco-friendly projects funded by green bonds have lower risk profiles and better environmental results, which investors find appealing. In particular, the study discovered that projects funded by green bonds had a 20%

lower default rate than those backed by conventional bonds, confirming both their environmental advantages and their financial sustainability. As more and more investors look to strike a balance between profitability and ethical investing, this trend is especially significant. Furthermore, the global green bond market has expanded rapidly, with over \$500 billion issued in 2021 alone, according to a report from the Climate Bonds Initiative (2021). This is indicative of a larger trend in which institutional investors are incorporating environmental considerations into their investment strategies (Liu et al., 2023).

Another cutting-edge strategy in sustainable finance is the use of sustainability-linked loans, which tie borrowing costs to borrowers' achievement of sustainability goals and encourage businesses to improve their environmental performance. These financial instruments connect financial returns with sustainable development goals and promote business sustainability initiatives, according to research by Sullivan and Mackenzie (2020). As per the Climate Bonds Initiative (2023), there has been a notable 300% increase in the issuing of loans connected to sustainability between 2020 and 2022. This expansion is a result of investors' increased desire to fund ecologically conscious initiatives as well as their growing awareness of their potential to spur investments in sustainable infrastructure. The concrete advantages of tying financial incentives to sustainability performance are further demonstrated by a study conducted by the International Finance Corporation in 2022, which discovered that companies using sustainability-linked loans reported an average 15% improvement in their sustainability metrics over the course of the loan. In conclusion, these results show that sustainable finance mechanisms, such as sustainability-linked loans and green bonds, are successful in promoting sustainable business practices, enhancing financial stability, and raising capital for climate-resilient infrastructure. This establishes sustainable finance as a key component in the shift to more ecologically friendly infrastructure development.

#### **4.2 Economic and Social Benefits of Sustainable Investment Strategies**

Sustainable investing solutions provide numerous and significant social and economic advantages. In addition to reducing the dangers associated with climate change, investing in climate-resilient infrastructure is essential for boosting economic growth and creating jobs. A International Labour Organization (2021) analysis estimates that by 2030, the shift to a green economy could generate an astounding 24 million jobs worldwide. In order to create a sustainable future, it is anticipated that this job growth will mostly take place in industries like renewable energy, sustainable transport, and waste management. For example, jobs in the renewable energy industry alone have increased significantly, with jobs in solar and wind energy growing quickly as a result of cost reductions and technological developments (IRENA, 2022). Furthermore, by giving people access to basic



services like clean water, sanitary facilities, and effective public transportation, investments in sustainable infrastructure frequently promote social fairness, increase community resilience, and improve public health outcomes (World Bank, 2020).

Furthermore, investments in sustainable infrastructure have strong financial benefits. According to a Global Commission on the Economy and Climate (2018) research, there is a potential for up to four dollars in economic gains for every dollar spent on climate-resilient infrastructure. This research emphasizes how crucial it is to incorporate sustainability into financial decision-making procedures in order to optimize social and economic benefits. For instance, investing in green buildings lowers operating costs, improves tenant productivity and health, and lowers energy consumption and greenhouse gas emissions (Kats, 2003). Moreover, sustainable investment strategies can lower systemic risks, improving long-term economic stability, according to the United Nations Environment Programme (2021). In addition to tackling the urgent issues brought on by climate change, governments and investors can build a more resilient economy that benefits all facets of society by giving priority to investments that are consistent with environmental sustainability and social responsibility. In conclusion, incorporating sustainable investing strategies has the potential to yield substantial social and economic benefits, laying the groundwork for a more just and sustainable future.

#### **4.3 Barriers to Implementing Sustainable Finance**

A number of obstacles prevent sustainable finance from being widely used in infrastructure construction, despite its encouraging potential. Investors may become uneasy due to the absence of established measures and frameworks for assessing sustainability achievements (Baker et al., 2021). According to an OECD survey from 2020, 60% of investors stated that one of the biggest obstacles to funding sustainable projects is the lack of well-defined sustainability measures. Furthermore, investment may be discouraged by the high upfront costs of sustainable infrastructure projects, especially in developing nations with limited financial resources. Furthermore, policy and regulatory frameworks frequently fall behind the quick development of sustainable finance, which might discourage investment by fostering an atmosphere of uncertainty (Zeng et al., 2021). Governments, financial institutions, and other stakeholders must work together to remove these obstacles and establish supportive conditions that encourage sustainable investment.

#### **4.4 Importance of Collaboration among Stakeholders**

For sustainable infrastructure projects to be successful, cooperation between stakeholders—including local communities, private sector players, and government agencies—is essential. More creative and significant solutions can result from partnerships that effectively utilize a range of resources, viewpoints, and areas of expertise. For instance, because they combine the efficiency of the private sector with public scrutiny, public-

private partnerships (PPPs) have been found to be successful methods for funding and implementing sustainable infrastructure projects (Hodge & Greve, 2020). In order to make sure that infrastructure projects satisfy the demands of the communities they serve, it is also crucial to involve local people in their design and execution. Involving the community can boost project acceptance, results, and long-term sustainability, according to research from the United Nations Development Programme (2021). Sustainable financing may significantly contribute to the development of climate-resilient infrastructure that benefits both people and the environment by encouraging cooperation among diverse stakeholders.

## 5. CONCLUSION

In a nutshell this review emphasizes how important sustainable finance is to improving infrastructure resilience to climate change. The analysis's main conclusions show that initiatives like green bonds and sustainability-linked loans are not only good at raising money for green projects, but they also have a significant positive economic and social impact. Strategies for sustainable financing have the potential to significantly increase employment, strengthen community resilience, and promote fair access to basic services. These results highlight the need for a paradigm change in the way that infrastructure investments are made, with sustainability being emphasized as a fundamental tenet. These observations have broad ramifications for investors, legislators, and industry professionals. It is recommended that policymakers establish legislative frameworks that encourage investment in climate-resilient infrastructure and assist the development of sustainable finance markets. This involves defining precise criteria and definitions for green investments, which can promote openness and confidence among interested parties. Conversely, investors ought to give top priority to sustainable investing strategies that match monetary gains with more general environmental and social objectives. In order to ensure that new developments are robust to climate impacts and help reduce greenhouse gas emissions, practitioners in the infrastructure sector must also modify their project planning and execution procedures to integrate sustainability measures.

## 6. RECOMMENDATIONS

There are important issues that need more investigation in future studies. The necessity of long-term studies that evaluate the effects of sustainable finance on infrastructure performance and resilience over time is one important recommendation. These kinds of studies can yield important information about how sustainable investments affect long-term environmental and societal effects in addition to short-term financial gains. To find best practices and possible implementation obstacles, researchers should also look into how well different sustainable finance instruments work in diverse sectors and geographical areas. Additionally, there is a significant push for collaborative frameworks and interdisciplinary approaches that bring together specialists in

social equality, urban planning, environmental science, and finance. It is feasible to promote sustainable financial practices that are in line with the objectives of climate resilience by encouraging cooperation among various stakeholders, such as governments, private sector players, and civil society. Such cooperation can promote information exchange, creative problem-solving, and the creation of all-encompassing plans that tackle the many issues raised by climate change. To sum up, adopting sustainable finance as a cornerstone of infrastructure development will help create a more resilient and sustainable future, but doing so calls for coordinated efforts from all fields and sectors.

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## THE GLOBAL POWER PLANT SYSTEM IN THE WORLD WITH A REVIEW OF THE REPUBLIC OF NORTH MACEDONIA

M-r Sašo Lazaroski

Power Plants of the Republic of North Macedonia

Email: [sas34laz@yahoo.com](mailto:sas34laz@yahoo.com)

### Introduction

Energy is a fundamental requirement for any economic activity. Therefore, its absence or abundance affects societies, but societies also affect energy. Given that energy is a key input for the productivity of national economies in the 21st century, the role of energy in economic growth is a key driver for development. From an occupational health and safety perspective in the overall economy, energy should be treated like any other scarce resource that needs to be efficiently allocated. This means that microeconomic concepts of energy supply and demand and macroeconomic issues of investment, financing, and correlation with other economic concepts should be the main topics in defining the role of energy in the economy and the successful implementation of occupational health and safety in the energy sector. The energy field is influenced by interactions that occur at international, national, regional, local, industry, and household levels. These interactions often involve interdisciplinary areas and interests, which raise questions about energy use and its effects on the environment, security, and, more importantly, the needs of the energy sector and the socioeconomic interests of different groups, etc. Particular attention is paid to macroeconomic issues of investment in hydropower infrastructure, occupational safety and health, and the overall impact on the national economy. First of all, we must be clear: the person in charge of small hydropower is the first person responsible for the safety of the enterprise. Therefore, in the work of safe production, the first thing we should focus on is the performance of the person in charge of small hydropower, mainly to verify the implementation of obligations, establish rules and regulations, and invest in safe production.

### Abstract

According to the analyses, the energy sector in R. Macedonia also faces great challenges at the global level. On the one hand, there is a risk of the need to increase the import of electricity in certain regions as a result of the reduction of domestic energy sources, such as coal. On the other hand, there is a lack of interest and clear strategic planning regarding how to realize the planned investments to increase domestic energy production. In

the eyes of many occupational safety professionals, occupational safety in the energy sector is a very metaphysical matter. Before the accident, we never know what the next accident will cause. Let's take a direct example: in a certain detail, we did not fulfill our supervisory duties, the accident rate is somewhere around 0.001%, and if we fulfilled our supervisory duties, the accident rate would be reduced ten times to 0.0001%, but it was 0, 0001 % which can cause production safety accidents. We can only say that we are trying to deal with hidden dangers, reduce risks, and reduce the possibility of accidents in the energy sector. In the energy sector, structural development can lead to significant changes in the development of societies. It is the result of the very nature of energy, which is an important factor for the economic survival of all social structures. The effects of energy affect the lives of individuals and their households, small businesses, industry, and local communities, regional development and the development of national economies, and international organizations, all the way to global climate change on planet earth realized through safety and health at work. Energy is not always the ultimate goal of economic activities and safety and protection at work. Especially when it comes to the impact of energy on the economic growth and development of societies, energy is thought of as an input, with the help of which further production is possible, as well as the functioning of many economic activities achieved through a safety system at work.

**Keywords: energy, hydropower plants, energy, safety and health at work, and human factor.**

### **1. The latest findings on hydropower plants in the energy sector at a global level.**

The supply of electricity has become vital for almost every European nation over the past year as the region moves away from dependence on Russian fuel imports. While many countries are making progress in the energy transition from fossil fuels, nearly half of European countries still rely on them as the primary source of electricity production.

The data from Visual Capitalist displays European countries according to their largest source of electricity production, using data from the International Energy Agency (IEA) electricity maps, along with an overview of total electricity production in the EU by source in 2021. Montenegro is marked in blue on the map, which means that the electricity is primarily generated from hydroelectric plants, that is, from renewable sources.<sup>1</sup>

Europe is continuously transitioning to renewable energy sources for electricity generation, achieving significant progress over the past decade. In 2019, fossil fuels (oil, natural gas, and coal) accounted for 49 percent of electricity production in the EU, while renewable energy sources made up only 18 percent. A decade

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<sup>1</sup> „[Electric Power Industry of Serbia 2004](#)“ (PDF). RENEUER. Архивирано од [изворникот](#) (PDF) на 5 November 2022. Посетено на 15 June 2023



later, renewable energy sources are approaching the level of fossil fuels, with renewables constituting 32 percent of electricity production in the EU compared to 36 percent from fossil fuels in 2021.<sup>1</sup>

The expansion of wind and solar power production was the main driver of the shift towards renewable energy, which increased from just 8 percent of electricity generation in the EU in 2018 to 19 percent in 2021. Although this still seems small, the EU's share of electricity generation from wind and solar ranks first right after Oceania compared to other regions in the world. Although hydroelectric power does not occupy as much as other sources, it is the most common primary source for electricity generation in Europe, playing an important role in providing renewable energy. Nuclear energy is the largest single source of electricity generation in the EU and across the rest of Europe, despite its decline in recent decades. In 2015, nuclear energy accounted for one-third (33 percent) of electricity production in the EU, and in the following years, it fell to 25 percent. Looking at individual nations, most major European countries have fossil fuels as the largest single primary source of electricity.<sup>2</sup>

Germany remains largely dependent on coal energy, which generated 31 percent of the electricity in the country from 2017 to 2021. Despite the reliance on carbon-intensive fossil fuels, the production of energy from wind and solar together accounted for more than the production of electricity in Germany, making up 33 percent (23 percent from wind and 10 percent from solar energy).<sup>3</sup>

France is the largest European economy that primarily relies on nuclear energy, which accounts for more than half of the country's electricity production. Italy, the United Kingdom, and the Netherlands are primarily powered by natural gas.

As long as Italy is the most dependent, with 42 percent of its electricity generated from natural gas, the Netherlands (40 percent) and the United Kingdom (38 percent) are not far behind. Spain is a different story among the major European countries and is witnessing success in the transition to renewable energy sources.<sup>4</sup>

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<sup>1</sup> ↑ „**NIS and RAGF signed an Agreement on Exploration in Hungary**“.

↑ <http://www.srbijagas.com/o-preduzecu/delatnost/transport/transport-prirodnog-gasa.67.html> 2023

<sup>2</sup> „**Vucje Power Plant – a World Heritage Gem**“. [voiceofserbia.org](http://voiceofserbia.org). Посетено на 18 July 2022

<sup>3</sup> ↑ „**NIS and RAGF signed an Agreement on Exploration in Hungary**“.

↑ <http://www.srbijagas.com/o-preduzecu/delatnost/transport/transport-prirodnog-gasa.67.html> 2023

<sup>4</sup> „**EPS**“. Energy Fundamentals. Архивирано од [изворникот](#) на 6 November 2013. Посетено на 15 June 2023.

During the period from 2017 to 2021, the country was primarily dependent on natural gas (29 percent). In 2022, the contribution of natural gas to electricity production fell to 14 percent, as wind energy increased and became the primary electricity producer with a share of 32 percent.<sup>1</sup> Since the Russian invasion of Ukraine, energy independence in the EU has become a priority, and countries have seized the opportunity to accelerate the transition to renewable energy sources. A new report by Ember emphasizes how the transition made significant progress in 2022, with solar and wind energy (22 percent) surpassing natural gas (20 percent) in electricity generation for the first time. While 2022 saw an increase in electricity generation from fossil fuels in the EU, Ember expects this to decrease by as much as 20 percent in 2023. If the EU can maintain this accelerated shift away from fossil fuels, the map of primary energy sources for electricity generation could include many more renewable sources and low-carbon energy sources shortly.

## 2. Conditions in power plants and OSH in the Balkan regions

European fossil fuel power plants are either being shut down or kept in cold reserve, to be activated only in case of major electricity supply interruptions. In Serbia, energy facilities such as TPP Kolubara and TPP Morava are approaching the end of their operational life, raising questions about their future status and use. These two thermal power plants face limitations by the European Union's Large Combustion Plants Directive, which sets environmental standards for emissions reduction. According to the National Emissions Reduction Plan (NERP), thermal power plants that do not meet specific conditions may only operate for a maximum of 20,000 working hours between 2018 and 2024. Since most units have now reached the end of this period and have not brought their emissions into compliance with environmental protection regulations, it is anticipated that they will cease operations.

In the next two to two and a half years, Serbia will have built 317 small hydropower plants, with a total capacity of about 100 megawatts or 400 gigawatt-hours of electrical energy. The estimated value of investments for all 317 locations is around 500 million euros, of which 300 million will be allocated to underdeveloped municipalities. According to forecasts, the new hydropower plants will create around 1,000 jobs, and considering that they will boost domestic industry, construction, and various other sectors, it can be said that there will be tens of thousands of new jobs.<sup>2</sup> In Serbia, there are over 900 locations for small hydroelectric

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<sup>1</sup> „[Electric Power Industry of Serbia 2004](#)“ (PDF). RENEUER. Архивирано од [изворникот](#) (PDF) на 5 November 2022. Посетено на 15 June 2023

<sup>2</sup> „[Nine decades of hydroelectric power station "Moravica" in Ivanjica](#)“. vabilia.rs. politika.rs. Посетено на 18 July 2019.

power plants, but for these, there was complete documentation at the time of the tender announcement for 317 of them. Among the investments in new plants in the new investment plan of the Republic of Serbia, the construction of the reversible hydroelectric power plants (RHPP) Đerdap 3 and Bistrica stands out, which can play a significant role in the energy transition, particularly in facilitating the integration of solar energy and wind power plants. Plans for the construction of the reversible hydroelectric power plants (RHPP) Đerdap 3, with a capacity of 2,400 MW, and Bistrica, with a capacity of 680 MW, have existed for several decades.<sup>1</sup> On several occasions, foreign investors have expressed interest in the construction, but nothing concrete has happened. The investment in Đerdap 3 is very high and is estimated at several billion euros, while in Bistrica it is around 600 million euros.<sup>2</sup>

Reversible hydropower plants solve the problem of variable electricity production from wind turbines and solar power plants. These power plants work on the principle of pumping water from a lower reservoir or river to an upper reservoir, from where the water is used for conventional production. Reversible hydropower plants produce peak energy and power to cover maximum consumption during the day, in other words, they produce the most expensive energy. They are also a solution for the variability of production. When there is too much energy from solar power plants and wind turbines, that energy can be used to pump water into an upper reservoir. When their production is lower, then the pumped-storage hydropower plants can compensate for that deficit and can quickly start generating energy. These hydropower plants act as energy storage capacities.

On the other hand, a common aspect for all countries in the region is the untapped potential of solar and wind energy. From the analysis of the research results conducted by several international organizations, we can conclude that the projects for the construction of new hydroelectric power plants in the countries of the Western Balkans will become increasingly difficult to implement in the future due to climate change, public opposition, and legal and financial challenges, whereby these projects will either not contribute to energy security or will not have sufficient economic potential. Hydroelectric plants traditionally play a significant role in many power systems in Southeast Europe, with a particularly large share in some countries of the Western Balkans, where they have been a pillar of electricity production alongside coal for decades.

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<sup>1</sup> ↑ „„Oteta“ elektrana – temelj buduće Elektroprivrede“. te-ko.rs (srpski). Архивирано од изворникот на 2014-07-26. Посетено на 18 July 2023.

<sup>2</sup> ↑ „Exploration, production pace faster in Serbia, Bosnia and Herzegovina – Oil & Gas Journal“. **Ogj.com.2023**

From the analysis I conducted titled “Why Hydropower in Southeast Europe is a Risky Investment,” I concluded that many countries in Southeast Europe are at a stage where new hydropower capacities will not contribute to energy security due to excessive dependence, as is the case in Albania, Bosnia and Herzegovina, Croatia, and Montenegro, or they have little economic potential left, as is the case with Bulgaria and Kosovo. Albania is almost 100% dependent on hydropower, Montenegro about 50%, Bosnia and Herzegovina produces about one-third of its electricity from hydropower plants, Serbia about 28%, and North Macedonia nearly a quarter.<sup>1</sup>

Over the past two decades, hundreds of small hydropower plants with a capacity of up to 10 megawatts have been built across the region, often in protected areas or other highly sensitive habitats. Meanwhile, attempts to construct "greenfield" hydropower plants over 10 megawatts have largely been unsuccessful, except in Albania and Slovenia. Bosnia and Herzegovina is particularly ambitious, although it has not completed a single new large hydropower plant in the past decade. Pointing to the risks of hydropower projects, through the reports that were the subject of my analysis, I assessed that their realization will become increasingly difficult due to climate change, the unique biological diversity in the region, legal challenges, public resistance, financial issues, and largely unaddressed occupational safety and health systems. Research results showed me that there are high risks associated with the construction of nine hydropower plants in the region, including the Skevice plant in Albania, Bistrica, Buk Bijela, Dabar, Ulog, and Janjići in Bosnia and Herzegovina, and Komarnica in Montenegro.

Good recommendations would be that low-risk investments can help the region transition to a greener, socially and economically sustainable energy system. I have found that a common factor for all countries in the region, based on analyses and research results, is the untapped potential of solar and wind energy.

## **Conclusion**

Hydropower is the largest global source of renewable energy. According to recent data from the International Renewable Energy Agency (IRENA), it accounts for 40 percent of total capacity, ahead of solar energy (28%) and wind energy (27%). At the top of the list is China’s Three Gorges Dam, which was opened in 2003 and has an installed capacity of 22.5 gigawatts (GW), which is nearly double that of the second-ranked Itaipu Dam. However, when it comes to annual production, the Itaipu Dam generates approximately the same amount of electrical energy. That is because the Paraná River has small seasonal variations, which means that the flow rate changes very little throughout the year. On the other hand, the Yangtze River experiences a

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<sup>1</sup> ↑ „Exploration, production pace faster in Serbia, Bosnia and Herzegovina – Oil & Gas Journal“. Ogj.com.2023

significant drop in flow during several months of the year. The Three Gorges Dam is an engineering marvel whose construction cost more than 32 billion dollars. To understand its size, the following facts should be considered: The Three Gorges Reservoir (which supplies the dam) contains 42 billion tons of water. The reservoir covers an area of 1,045 square kilometers. The mass of this reservoir is substantial enough to slow down the Earth's rotation by 0.06 microseconds. Of course, any man-made infrastructure of this size will certainly have a significant impact on the environment.<sup>1</sup> A 2020 study shows that the dam has caused more than 3,000 earthquakes and landslides since 2003.<sup>2</sup> Although hydro-energy can be profitable, there are legitimate concerns about its long-term sustainability. For starters, hydroelectric dams require large water reserves upstream to ensure the continuity of water supply. Flooding new land surfaces can disrupt wildlife habitats, deteriorate water quality, and even trigger natural disasters like earthquakes. Dams can also disturb the natural flow of rivers. Some studies have shown that millions of people living downstream from large dams are constantly worried about access to food and flooding.

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<sup>1</sup> „Архивиран примерок“ (PDF). Архивирано од изворникот (PDF) на 24 август 2013. Посетено на 20 август 2019.

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## CADJEHOUN CARDINAL BERNADIN GANTIN INTERNATIONAL AIRPORT'S CONTRIBUTION TO TOURISM PROMOTION

AISSI Jean-Roitinos<sup>1,2</sup>, SODJI Jean<sup>1</sup>, AKOGBETO Nadine<sup>1,2</sup>, AZIAN Donatien<sup>1</sup>, ASSOGBA Sylvestre<sup>4</sup>, GOUTHON Gilchrist<sup>1</sup>, DOHAMI Amaleck<sup>1</sup>, HOUNDONUGBO Pierrette<sup>2</sup>, ADONON Brice<sup>5</sup>, GBESSO Florence<sup>1</sup>, TECHOU Roland<sup>2</sup>, MONTCHO Bruno<sup>3</sup>, ABDOULAYE Djafarou<sup>1</sup>.

<sup>1</sup>Department of Geography and Land Management (DGAT), University of Abomey-Calavi (UAC), Benin

<sup>2</sup>Tourisme and leisure Department, Haute Ecole de Commerce et de Management (HECM), Bénin

<sup>3</sup>Departement of sociology-Anthropology, University of Abomey-Calavi (UAC), Benin

<sup>4</sup>Molécular Biology and Microbiology Laboratory, University of Abomey-Calavi (UAC), Benin

<sup>5</sup>Departement of Econopmics and Management, University of Abomey-Calavi (UAC), Benin

\*Correspondance : [aissirockfeller@gmail.com](mailto:aissirockfeller@gmail.com), Tél : (+229) 01 97 46 80 99

### ABSTRACT

Airports are often the first point of entry for many travelers, and offer an ideal platform for showcasing the local attractions and unique experiences available nearby. Promoting tourism through an airport is of crucial importance in encouraging travelers to explore a region's cultural, natural and historical riches. The aim of this study is to promote tourism through Cadjehoun's Cardinal Bernadin Gantin International Airport.

The methodology adopted is based on the collection and analysis of data from 86 people by reasoned choice, through semi-structured interviews, focus groups (qualitative survey), and quantitative surveys, with the use of likert-scale questions to assess the airport's impact on tourism satisfaction. SWOT analysis of the airport, based on the results of interviews and questionnaires.

The results reveal that 90% of respondents see the airport as a strategic lever for attracting tourists and stimulating the local economy. 82% of respondents say that there are obstacles to promoting local tourism within the AICBG. 70% of respondents say that there are effective communication channels within the AICBG to reach travellers. There are several marketing and communication strategies to attract travelers to tourist destinations through the AICBG.

**Keys words:** Airport, promoting tourism, local destinations, local attractions

## THE ROLE OF MARKETING AUTOMATION IN THE ACCELERATION OF THE GROWTH OF E-COMMERCE STARTUPS: THE CASE OF M CAKE SHOP

Sara ZELLEĞ

ORCID: 0000-0003-2270-6648

E-mail: sara.zelleg@univ-bejaia.dz

A-Mira University of Bejaia, SEGC Faculty, Department of Commercial Sciences, Bejaia, Algeria

### Abstract

This study examines how marketing automation can accelerate the growth of e-commerce startups, with a particular focus on M Cake Shop, a young company specializing in the online sale of baking utensils. Marketing automation, by automating a series of marketing tasks, becomes a valuable tool for these companies seeking to maximize their efficiency while minimizing their costs.

To conduct this research, a qualitative method was chosen, combining an in-depth case study and semi-structured interviews with the founders and marketing managers of M Cake Shop. Internal data, such as performance reports and the results of past campaigns, were also used to measure the impact of marketing automation. The main objective was to analyze how these tools contribute to customer acquisition, campaign management, and retention.

The results revealed that M Cake Shop has effectively integrated marketing automation tools, including personalized messaging campaigns and retargeting strategies on social media. These initiatives have increased the conversion rate while specifying the customer acquisition cost (CAC) over six months. Moreover, the use of automated messages has strengthened customer loyalty by personalizing interactions according to customer preferences.

Thus, marketing automation proves to be a powerful and affordable lever for e-commerce startups, allowing them to maximize their profitability while optimizing customer relationship management.

**Key words: Marketing automation; acquisition ; startup; e-commerce ; development**

## INVESTIGATING THE EFFECTS OF EMPLOYEE TRAINING & MANAGEMENT DEVELOPMENT ON ORGANIZATIONAL PERFORMANCE (A STUDY OF SELECTED BRANCHES OF FIRST BANK OF NIGERIA PLC, ABUJA)

**DR CHUKWUEMEKA GODSON EME (PhD)**

**Lecturer, Department of Business Administration, Faculty of Management Sciences, National Open University of Nigeria (NOUN), Jabi-Abuja, FCT., Tel: +234, 1, 904, 992, 9862;**

**E-Mails: [ceme@noun.edu.ng](mailto:ceme@noun.edu.ng); [kaluchujwuemeka26@yqhoo.co.ok](mailto:kaluchujwuemeka26@yqhoo.co.ok)**

### Abstract

This study seeks to examine the impact of employee training and management development on organizational performance (a case study of selected Branches of First Bank of Nigeria PLC. The specific objectives were: to examine the training and development practices at the First Bank of Nigeria PLC; to investigate the impact of training and development need assessment, method and design on organizational performance; to identify the contributions of training and development to both employees and organizational productivity at the First Bank of Nigeria PLC. This study is underpinned or anchored by the Resource-Based View Theory, Human Capital theory and Reinforcement theory. The total population for the study was 1,200 out of which 120 was selected through a simple random sampling technique (that is, 10% of the total population). This empirical study adopted the descriptive survey research design methodology. To answer the research questions and test formulated hypotheses, the study relied on structured questionnaire, which is the primary data collection method adopted to generate relevant data. Out of the 120 questionnaires administered only 90 were returned representing 75% which is an effective response rate. A reliability coefficient of 0.70 was obtained using Cronbach Alpha. Mean and Standard Deviation (SD) was used to answer the research questions while hypotheses were tested using student t-test at 0.05 level of significance. The findings indicated that training and development were positively correlated and adjudged statistically-significant relationship with organizational performance. The study findings indicated that there was effective training and development practices in the study area, consequently the result disclosed that training and development processes have been systematic. Hence, the researcher recommended that the top Management and other training coordinators should pay attention to the employees' training and their human capital development and evaluate the results periodically and evaluate training program based on the objectives of the training.

**Key Words: Employee Training, Management Development, Organizational Performance. First Bank of Nigeria (FBN Plc), Abuja-FCT**

## 1.0 Introduction

In a today's changing global context, both individual and collective skills are the most important assets for organizations, and determine their productivity, competitiveness and ability to adapt and be proactive when faced with an uncertain environment (Pilar Pineda, 2010). As Armstrong (2006) stated, if a training strategy is formulated and carried out properly, it would be a crucial device for generating new skills and changing inappropriate skill in people.

According to Beardwell, Holden and Claydon (2004) training, development and skills are key aspects of economic life, hence training offers the hope of increased competitiveness through raising skill levels, productivity and 'value-added' at the level of the firm and the national economy. Raymond et al., (2011) also clearly stated training as one of the crucial human resource practices and are a process whereby people acquire capabilities to aid in the achievement of organizational goals. As stated by Alexandros and John (2007), it is evident that there is a strong linkage between HRM practices and organizational performance. However, Guest (1997) recognized that training and development, as a unique practice, affects the quality of the HR outcome of the skills and ability, but behavioral and attitudinal change and thus higher performance will be achieved by the contribution of the implementation of other practices as well.

According to Elnaga and Imran (2013) tries to state that training plays vital role in the building of competencies of new as well as current employees to perform their job in an effective way. It also prepares employees to hold future position in an organization with full capabilities and helps to overcome the deficiencies in any job-related area. Training is considered as the sort of investment by the organization to achieve competitive advantage.

Moreover, in training and development activities, the ability to recognize the systems and subsystems of an organization is an important element. Training and development exist to promote individual and organizational excellence by providing opportunities to develop workplace skills. The design and implementation of effective training interventions cannot be accomplished without identifying the various processes operating within the system (Laird, 2003). Thus, training is the fundamental area of human resource, which is referred to as a course of diet and exercise for developing the employees' affective, cognitive and psychomotor skills that assist the organizations to have a crucial method of developing the employee towards enhancing his productivity (Ezeani & Oladele, 2013). Furthermore, Devi & Shak (2012) explained that training holds the key to unlock the potential growth and development opportunities to achieve a competitive advantage. In this co text, organizations train and develop their employees to the fullest advantage in order to enhance their effectiveness. The effectiveness and success of an organization therefore, lies on the people who perform and work within the organization. It follows that for the employees in an organization to be able to perform their duties and make

meaningful contributions to the success of the organizational goals, they need to acquire relevant skills and knowledge.

According to Ampomah (2015), training and development describes the formal, ongoing efforts that are made within groups to enhance the overall performance and self fulfilment of their employees through a ramification of tutorial strategies and packages. In the contemporary workplace, these efforts have taken on a huge variety of programs from instruction in rather precise activity capabilities to lengthy-time period of expert development; hence, Jimma University, the national pioneer in community-based education stated that education and research are strongly interlinked with the community to address its socio-economic problems. Due to this training of employees in continuous form, it improves the quality of services provided to customers of the university and quality system in the training process must be adopted, which is reflected in the performance of employees of the organization. Therefore, this particular study titled: The Impact of Employee Training and Management Development on Organizational Performance (A Case Study of Selected Branches of First Bank of Nigeria PLC).will try to focus on the impact of training and management development on organizational performance at selected branches of First Bank of Nigeria PLC.

Employee performance depend on many factors like job satisfaction, knowledge and management skills but there is relationship between training and performance (Khan R. A. G., 2011). This shows that employees'' performance is important for the performance of the organization and that training and development is beneficial for the employees to improve their performances. This can only be possible if the employees are effective on their job therefore, training and development of employees is inevitable.

Training is important for the employees' development and the employees'' development encourage self-fulfilling skills and abilities of the employees, decrease operational costs, limits organizational liabilities and changing goals and objectives (Donald, 2009). It is very difficult for an employee to perform well at the workplace without any pre-training (Garavan, 1997). Trained employees perform better than the untrained ones (Adenuga, 2011). As a result, it is very necessary for every organization to train its employees in order to meet overall goals of the organization. Training and development, and on-the-job training have significant effect on organizational performance (Khan, Khan & Khan, 2011). However, to improve employees' knowledge and skills, employees must also develop a greater self-efficacy and confidence in performing their job. Thus, the purpose of this study is to investigate the impact of employee training and management development on employee performance of selected branches of First Bank PLC.

### 1.1 Statement of the Research Problem

Over the years, the banking industry has been allocating huge sums of money towards training of bank staff in order to build the capacity of staff to perform their job functions effectively and First Bank of Nigeria PLC has an established training department or unit which is solely vested with the responsibilities of seeing to the staff growth and development which cannot be achieved without progressive programs. Notwithstanding the vast investment in training, the Bank is still confronted with a lot of challenges in the area of effective performance of bank staff. The end goals of training and development may not be achieved unless transfer of training occurs. Transfer of training is the degree to which trainees effectively apply the training from a training context to the job.

Therefore, it is the right thing for the Banks to rationally think of appraising the impacts of training on staff performance to make sure the benefits being derived are commensurate with the cost of training. This research work is therefore set to determine the effectiveness of training programs on the achievement of the overall objectives of the whole organization thereby impacting the organization's performance. It will also attempt to investigate whether training has increased workers' knowledge, skill and morale, improved workers' attitude and their sense of responsibility, reduced production time, and wastage of materials i.e. motivate employees to perform at their optimum.

### 1.2 Objectives of the Study

The main purpose of this study is to investigate the impacts of Training and Management Development on Organizational Performance (A Case Study of Selected Branches of First Bank of Nigeria PLC). The specific objectives were to:

- i. examine the training and management development practice in First Bank of Nigeria PLC;
- ii. determine the extent to which training and management development has affected the knowledge, skill and morale of First Bank Nigeria PLC;
- iii. ascertain the extent to which training and staff development has reduced production time and wastage of materials at FBN PLC;
- iv. evaluate the extent to which the benefits derived from training has affected overall performance of the organization.

### 1.3 Research Questions

In line with the research objectives, the following research questions were formulated:

- i. What is the nature of training and management development practice in First Bank of Nigeria PLC?



- ii. What is the extent to which training and management development has affected the knowledge, skills and morale of employees of FBN PLC?
- iii. What is the extent to which training and management development has reduced production time and wastage of materials at FBN PLC?
- iv. What is the extent to which the benefits derived from training has affected overall performance of the organization?

#### **1.4 Research Hypotheses**

In line with the stated objectives, the following hypotheses were developed and will be tested at 0.05 alpha level of significance.

Ho1: There is no significant difference in the mean ratings between the male and female employees of the selected branches of First Bank PLC, Abuja, Nigeria.

Ho2: There is no significant difference in the mean ratings between the top-Management executives and other employees of the selected branches of First Bank Nigeria PLC Abuja FCT.

#### **1.5 Significance of the Study**

This study will be of benefit to First Bank of Nigeria PLC in assessing its current standing on training and development of staff leading to quality of output, higher performance of workers and how it can reinforce employees' motivation in the short, medium and long-run. Academicians and researchers may find this work as reference point for further research. Additionally, the students of Management Science will find this research valuable in the pursuit of academic work, especially for those aspiring to be managers or to own business organization, they will tend to use it to know the effect of staff training on the performance of an organization.

#### **1.6 Scope of the Study**

The study limits itself in investigating the impact of Training and Management Development on Organizational Performance (A Study of Selected Branches of First Bank of Nigeria, PLC, Abuja, Nigeria. It tries to educate the Managers, practitioners, academic and students on the necessity for relevant, effective and regular training and management development for all organization staff in order to enhance their efficiency and update their knowledge, skills, attitudes/abilities (KSA) and to ensure organizational performance and profitability in the long run.

Conducting effective research in Nigeria is not easy due to the fact that most people are reluctant to release information needed for research study. The researcher devoted enough time and effort in making sure that enough data are gathered to accomplish this research work. There is also the constraint of time as the researcher has to carry out the research work alongside his official duties where he works.

## **2.0 Literature Review**

This section would review related literature. The section will be divided into four major sections: the conceptual framework which will discuss the basic concepts associated with the topic of this research; the theoretical framework which will discuss the theories that underpin this study; the related empirical study associated with this research; and the summary of reviewed literature.

## **2.1 Conceptual Framework**

### **2.1.1 Concept and Meaning of Training and Development**

Training and development can be described in numerous approaches through specific authors. The major concept that every one of them highlighted in their research is the group of workers functionality enhancement. Training is a planned effort to permit personnel to learn task-related expertise, abilities, and conduct (Timothy et al., 2021). Development includes obtaining information, competencies, and behavior that enhance employees' capacity to meet the challenges of an recent or existing jobs, inclusive of the patron and patron demands of those jobs. Development packages is frequently in the recognition of getting ready employment for management duty (Noe, 2011).

Training and development are described as a process of systematically developing associated know-how and information in people for the reason pf improving overall performance (Richard et al., 2008). Training is the manner through which abilities are evolved, fact is furnished, and attributes are nurtured, to be able to help those who, work in organizations to update their skills. Training helps the organization to meet its purposes and desires, at the same time as contributing to the general development of employees. Training is important to help people qualify for a process, do the activity, or strengthen, however, it is also essential for reinforcing and transforming the job, so that the activity certainly adds value to the organization. Training allows studying; however, mastering is not only a formal pastime designed and encouraged by way of specially-prepared tutelage to generate unique overall performance developments (Leonard, 2021). Learning is also a more universal hobby, designed to boom capability and is facilitated formally and informally with the aid of humans at specific

tiers of the business enterprise. Training has to usually hold both the promise of maximizing mastery of the job (Richard et al., 2008).

According to Mahapatro (2010), training is an organized interest for growing the information and abilities of the human beings for a precise cause. It includes systematic techniques for transferring technical know-how to the personnel their expertise and capability for you to boom their expertise and capabilities for doing particular jobs with talent. In other words, the trainees accumulate technical know-how abilities and problem-solving capability through processing the training software.

Mahapatro (2010) stated that training refers to the teaching, getting to know activities carried on for the number one cause of assisting the individuals of an organization to acquire and respond to the expertise abilities, and competencies and attitudes wished through that organization. It is the act of increasing the information and ability of a worker for doing a specific job.

Businesses do not operate in a vacuum; they operate in an environment, including what makes it up. Understanding the environment within which the business has to operate is very important for running a business unit successfully at any place. Because, the environmental factors influence almost every aspect of business, be its nature, its location, the prices of products, the distribution system, or the personnel policies. Hence, it is important to learn about the various components of the business environment, which consists of the economic aspects, the socio-cultural aspects, the political framework, the legal aspects and the technological aspects etc.

As a concept, business environment is regarded to be a complex and important consequent, the concept has been addressed in a number of ways by different scholars. For example, Ola (2023) seems to believe that business environment is phenomenal, that is too complex and too varied to be captured by any one definition. The importance of business environment has been attested to by numerous scholars such as Oyebanji (2014), Lawal (2023) and Aldrich (2019). All these scholars have discussed extensively that business environment is an important process to influence on a group in particular situation and to motivate others to goals achievement. Environment in management does not mean the surrounding but it covers the factors or forces that affect business effectiveness in the process of producing an intending result. According to Dessler (2008), even if employees are carefully decided on, it does no longer assure nevertheless for the full proper employees' overall performance. This is because whilst the capacity of an employee o perform is one component, appearing is another and therefore a worker with an excessive potential to perform may not nevertheless perform his activity if he does not undergo education and development. This is why training for newly-hired begins with organizational orientation. Cole (2004) postulates that human assets are the most dynamic of all of the agency's

sources and consequently they want significant attention from the employee's management, if the human aids are to realize their full capabilities. Training and development spots simply as maximum different activities as an agency depend upon rules and techniques of the organization.

### **2.1.2 Training and Development Philosophy**

The training philosophy must describe the overall considerations and beliefs of the organization towards knowledge acquisition and the sensible utilization of all knowledge media available. The scope and general practice should be presented in concise statements by the training systems unit and should be agreed upon by the executives of the organization. According to Ghosh & Kumar (2003), some of the main statements of any training philosophy would include the following: "Training is the responsibility of the organization and for employee of the organization; training system is as much a part of the organization's operation as any man, machine, or method. A training system must be implemented through the active involvement of the managers and they will be responsible for its continuation.

A training system must provide training opportunities for all employees. A training must offer a wide variety of courses and subject matter and have reasonable, logical beginning point for each employee to enter in to the system. The training system must not be limited in the use of any source of knowledge or information. The acquisition of knowledge by every employee must be a continuing process. The true measurement of any knowledge is the performance of the employee in utilizing this knowledge on the job. The organization must recognize the achievement of each and every employee. The training system must not in any way be involved in the use of pressure or forced participation. It must be voluntary.

### **2.1.3 Training and Development Design**

According to Mahapatro (2010) employee training and development projects can be remodel by means of supplying extra abilities. Valuable education also includes situational training that provides employees the ability that permits them to make timely, knowledgeable decisions that benefits the employees as well as the enterprise. The most important advantage of personnel training is to beautify and enhance knowledge, skills, and attitudes (KSA), so one can better personnel' performance. According to Cole (2002), cited in Mozael (2015), the inspiration stone for human capital development is education, as it can be of gigantic benefit to the people in addition to agency, within the short and long term.

Some of the advantages from personnel training are firstly, complements and increases the pleasant and capability of personnel towards personnel-related duties, and in the end achieve exchange control, for example,

increasing new abilities and data, which lead to better knowledge amongst employees. Secondly, training program provides the possibility for personnel to upgrade their career, along with better prospects and protection at the workplace that could lead to decreased employee turnover (Uchegbu, 2022). Thirdly, personnel training enhances the chances of the employee to be elevated (promoted) to a higher level of duties. Finally, training allows employees to improve their morales and improve organizational culture, and encourage them to carry out their jobs easily.

Athar & Shah (2015), opine that personnel training fulfils organizational objective by integrating the interest of the organization and that of the workers. The personnel are the assets and the maximum vital sources for businesses so that businesses that provides education to their employee's growth and productivity. Therefore, the training and development is a crucial characteristic for the survival of any agency. According to Kum et al., (2014), effective worker education leads to an increase in organizational productivity. Consequently, accuracy, effectiveness, safety practices and accurate customer support may be predicted.

#### **2.1.4 Importance of Training and Development in an Organization**

Organizations do not just spend their money on staff training and management development for no specific reason. Training and development is embarked upon for the advantages and values it adds to an organization. According to Obidike and Udemgba (2020), some of the advantages of training and development to an organization are as follows:

- (a) Training and development create a pool of readily available and adequately skilled personnel to serve as replacements for employees who may be leaving the organization for various reasons;
- (b) Training and development increases productivity in an organization through more efficient performance of the workforce;
- (c) Training and development promote better human relations. A well-trained work team is more likely to respond positively to industrial needs and discipline.
- (d) Training and development enhance job satisfaction and cordial human relations in an organization. If employees are adequately trained to perform their duties efficiently and effectively, there is some joy derivable from a job well done.
- (e) Training and development brings about less damages and breakages at the shop floor level because the shop attendants have learnt the best way of handling the products;
- (f) Training and development enhances status, integrity and confidence on the part of the trained staff within and outside the work environment.

### **2.1.5 Concept of Organizational Performance**

Mathias and Jackson (2000), suggested that, to measure organizational human resources productivity effectively, one has to consider unit labor cost, or the total labor cost per unit of output. They further observed that an individual performance depends on three factors which are: ability to work, level of effort exerted at work and support given to the worker (in terms of training and development).

Charles and Aquilano (2019) argued that performance is measured in terms of outputs per labor per hour. However, this measure does not ensure that the firm will make money (for example, when extra units is not sold but kept as inventory). To test whether performance is the ability of an organization to achieve objectives such as high profit, quality product; large market share, good financial structures and survival at pre-determined time using relevant strategy for action. Thus, performance can also be employed to consider how an organization is performing in terms of market share, volume of products, customer's demand, loyalty and investment (Obiwuru, Okwu, Akpa & Nwankwere, 2011).

Business enterprise performance according to Oghojafor, Olatunji & Sulaimon (2011) is how a manager effectively and efficiently utilizes the organization's resources so as to achieve the organizational goals and satisfy the stakeholders. Furthermore, enterprise performance means how the growth potential exhibited by SMEs contributed substantially to job creation, thereby improving the economic status of the business enterprise as opine by (Adesanya, 2014).

## **2.2 Theoretical Framework**

This study is anchored or underpinned by the Resource-Based theory, Human Capital theory and Reinforcement theory. A brief discussion on these theories and its relevance to the study is instructive here.

### **2.2.1 Resource-Based View Theory (RBV)**

This theory, developed by Penrose (1959) provided the bases for the training and development. The RBV was as contended by Banney (1991), states that supported competitive advantage on the assets and abilities a firm control that are significant, uncommon, completely inimitable and not substitutable. These assets and capacities can be seen as organizational resources and schedules, and the data and information it controls. The relevance of RBV theory stresses the interest in individual's increases in the value of the firm. Resource-based view theory (RBV), AS Banney (1991) demonstrates, can create key ability and deliver human resource advantage (Armstrong, 2009).

### 2.1.2 Human Capital Theory

This theory was developed by Becker (1993) and provided the basis for the perspective that training and development is a worthwhile investment. The emphasis of human capital theory is how training and development influences on efficiency and productivity of workers through growing level of cognitive inventory of economic benefits from investment in people (Sweetland, 2007). Investing in human capital just like investing on physical capital is vital in adding to productivity of individuals in terms of labor. This develops the labor force both qualitatively and quantitatively, mainly because a qualified labor force increases productivity and brings investment to entrepreneurship. Becker (1993) recognized that education and training are the most important components of human capital investment, and that the income of a better educated and trained person is normally higher than the average wage rate. The relevance of this theory to the study is that the role of human capital as a potential wellbeing of feasible upper hand has as of late been the center of modern training and development in the 21<sup>st</sup> century organizations.

### 2.1.3 Reinforcement Theory

It was developed by Edward Skinner (1938) and emphasized that human beings are stimulated to perform or keep away from position or negative behavior because of consequences that have resulted from the behaviors. It emphasizes that human beings are inspired to perform or avoid certain behavior due to the sort of reinforcement which have resulted from one's behaviors. From training angle, reinforcement concepts indicate that for new comers to gather know-how trade conduct, or other capabilities, the instructor desires to perceive what effects the learner finds good and bad. Trainers then need to link these results to inexperienced person obtaining know-how capabilities.

Study by Ololube (2004) employed reinforcement theory in assessment of teachers' job effectiveness, in which he reveals two variables that promote reinforcement, that is environment and observable laws that can be changed or predicted according to the situation available. Armstrong (2009) and Noe (2010), revealed the following variables which a learner must acquire: knowledge, change of behavior, modification of skills, positive feedback and ability to adapt to his environment.

### 2.3 Related Empirical Studies

Mahadevan and Yap (2019) examined the impact of on-the-job and off-the-job training on employee performance. The researcher adopted positivism research philosophy and collected quantitative primary data



through survey questionnaire. The questionnaire was designed based upon various types of on-the-job data as the researcher distributed the questionnaire to all 162 employees in the target population providing an equal chance for all to participate in the study; 136 responses were returned, however, only 124 are accepted as the remaining was found to be incomplete. The collected data were analyzed using SPSS software in order to get the regression values. The result shows both on-the-job and off-the-job training achieve a sub-standardize coefficients beta value of 0.370 and 0.546 respectively with significant value of 0.000 which concludes the outcome of the research that on-the-job and off-the-job training have a positive significant impact on employee performance.

Kinisa (2019) investigated the impact of employees' training and development (T&D) practices on organizational performance in Tanzania banking industry, a case of NBC BANK IN Mwanza city. It was further guided by four specific research objectives. Personal interviews were also held with some management and industry staff of the bank. The results from the study indicate that NBC bank conduct TNA before running T&D programs. Most of the training facilitations for non-managerial employees were on-the-job training, while management mostly off-the-jpb training. The findings reveal that training practices and methods were reasonably planned and systematic in nature, although some employees were not satisfied with some of the training methods used such as lecture type and role play techniques. The study also found that although employees are trained on-job training with different methods, they prefer mentoring and coaching as well as job rotation because these methods help them in acquiring skills and knowledge to effectively deliver and efficiently perform their specific daily tasks.

Kahn et al., (2016) examined the influence of training and development on employee performance through job satisfaction; 115 questionnaire were distributed among top management executive and middle-level managers of the organizations in Abbottabad, Haripur and Mansehra of which 105 were returned. Convenience sampling technique was used for the data collection. The response rate was 91%. The finding of the study showed positive impact of training and development and job satisfaction with employee performance. Training and development will lead to higher job satisfaction level on employees and they will fulfil their duties with a great deal of responsibility with best performance.

Falola et al., (2014) examined the effectiveness of training and development on employees' performance and organization competitive advantage in the Nigerian banking industry. Descriptive research method was adopted for this study using two hundred and twenty-three (223) valid questionnaires which were completed by selected banks in Lagos State, Nigeria using simple random sampling technique. The data collected were carefully analyzed using descriptive statistics to represent the raw data in a meaningful manner. The results show that

strong relationship exists between training and development, employees' performance and competitive advantage. Summary of the findings indicates that there is strong relationship between the tested dependent variable and independent construct. However, bank management should not relent in their quest to train their staff to develop new ideas that will keep improving and retaining employee performance.

Mtulo (2014) investigated the different types of training and training methods employed by health department in Ilala Municipal. Secondly, to know the perceptions of trainees relative to the ideals in terms of implementation; and lastly, to measure the attitude of employees in the workplace. Findings revealed that there is a strong positive relationship between training and development and organizational performance.

Nikandrou, Brinia and Bereri (2009) found that employer perceptions of transfer climate were related to effort to apply training. Trainees who reported that their transfer environment had a high appreciation for performance and innovation, encouraged risk taking and allowed freedom to set goals, also reported greater effort to apply their skills learnt during training to actual work performance.

### **2.3.1 Gaps in Knowledge**

The researcher reviewed extensively previous literature on the subject matter on the impact of training and management development on organizational performance. The researcher was not opportune to identify any previous works that took a holistic view and chronicled an extensive review on previous empirical studies carried out on training and development as the present study did. Again, this is the first time, a study is being carried out specifically on training and development in First Bank of Nigeria PLC. Hence, this important gap in literature was filled by the present study.

### **2.4 Summary of Reviewed Literature**

This chapter reviewed extensively the related previous works carried out in this area of study. The literature review was sub-divided into four sections; that is, the conceptual review, which chronicled the review of the relevant concepts as used in the study, basically the concepts of training and management development, training and development philosophy, training and development policy, benefits of training and development, training and organizational performance; the theoretical framework chronicling the Resource-Based-View theory, Human Capital Development theory, and the Reinforcement theory, which theories under-pinned or anchored this study; and finally, discussions on the related empirical studies chronicled from previous researches on areas related to the present study, highlighting their research techniques, tools of analysis, findings and conclusions drawn therein.

### 3.0 Methodology

The researcher in this section examined the issues concerning research design, population, sample and sampling technique that will be used in this work. The researcher also examined the instrument for collecting data, the validity of the instrument, reliability of the instrument, procedure for data collection, method of data analysis and limitation of this study.

The design of this study is a descriptive survey method. It is used to describe what is existing and to answer the research questions raised by the researcher for the study. The population of this comprised of 1,200 employees of selected branches of First Bank of Nigeria PLC. In order to achieve a sample size that is representative of the total population, a 10% of the total population was adopted totaling one hundred and twenty thousand (120) respondents which is made up of 70 males and 50 females.

Simple random sampling technique was adopted for the study. In order to achieve a sample size that is representative of the total population, the researcher adopted a 10% of the total population totaling (one hundred and twenty) staff of selected branches of First Bank of Nigeria PLC. for the study. One research instrument was used for this study which was Questionnaire and it is titled: ‘‘Investigating the Impact of Training and Management Development on Organizational Performance (A Study of Selected Branches of First Bank of Nigeria PLC)’’. The reason for using questionnaire was based on the following advantages.

Firstly, it can give objective and reliable information if it is carefully and well-constructed. Secondly, it is relatively effective and easier to score and administer. Questionnaire is a good representation of group test and owing to the nature and diversity of the population questionnaire method becomes necessary. The questionnaire is divided into three sections to enable the researcher obtain information from the respondents. The five Likert scale (strongly agreed, agreed, undecided, strongly disagreed and disagreed) questionnaires will be adopted by the researcher. The Likert scale contain a list of statement that has relationship with the issue in the question, it does not only allow the respondent to check those statements in which they agree or disagree but allows the respondents to state the degree of agreement or disagreement with every statement (Osuala, 2007).

Face and content validity is employed in this study; the researcher employed the help of some senior lecturers from the Faculty of Management Sciences (FMS), National Open University of Nigeria (NOUN). After going through the work they advised the researcher to see a statistician who will scrutinize the objectives of the study, research questions, research hypotheses as well as the methodology of the study. The draft questionnaire was also presented to the project supervisor for necessary corrections and adjustments before the final copy was printed out for use in the research work.

In order to establish the reliability of the instrument, pilot study was carried out. The essence of pilot study was to test the adequacy and suitability of the instrument in measuring what it is supposed to measure and to ascertain any difficulty that the researcher may encounter. For the purpose of this, a total of (12) copies of the questionnaire representing 10% of the total population of study was administered to selected staff of First Bank of Nigeria PLC. They were filled under the supervision of the researcher. The filled questionnaires were collected and subjected to statistical analysis in order to determine the reliability co-efficient of the instrument as well as the internal consistency of the items within the instrument.

The data collected from the pilot study was analyzed using Cronbach Alpha technique and reliability index of 0.85 was obtained. Bennett (2006) testified that for a scale to be considered reliable, it should have a alpha value of 0.5 to 1. With the level of reliability index of 0.85, the instrument was considered reliable for use in the main study.

To administer the validated instrument of the study, an introductory letter was collected from the Head of Department and presented to the selected staff of First Bank of Nigeria (FBN) PLC. These respondents were drawn from the Management executive and other employees of FBN. The research assistants were educated on how to distribute and collect the questionnaires and who is qualified to be given the questionnaire.

The analysis of data for this study was done based on the hypotheses formulated. The researcher used descriptive statistical method for bio-data presentation. Measures of relationship between the variables were being carried out using independent t-test. The simple percentage, mean score and standard deviation was used to answer the research questions. All hypotheses were tested using the independent t-test at 0.05 alpha level of significance like what is obtainable in other social sciences. The reason for adopting these statistical tools is to test whether there will exist some significant differences or not and either to retain or reject the null hypotheses. Conducting effective research in Nigeria is not easy due to the fact that most people are reluctant to release information needed for research study. The researcher devoted enough time and effort in making sure that enough data are gathered to accomplish the research work. There is also the constraint of time as the researcher has to carry out the research work alongside his official duties.

#### **4.0 Data Analysis, Interpretation and Discussion of Results**

This section presents the data collected, the analysis carried out and the discussion of the results obtained. The analysis is presented in sections. The first section presents the frequency and percentage distribution of the data respondents and nominal questions as responded by respondents. The second section presents the answers to the research questions using descriptive parameters of mean scores and standard deviation. The third section

presents the testing and interpretation of the two null hypotheses using parametric statistical techniques of independent t-test. All hypotheses were tested at 0.05 alpha level of significance. The major findings are then revealed before the discussion of the major findings.

#### 4.1.1 Analysis of Demographic Information

This section chronicled the demographic information, impact of training and management development on organizational performance, using selected branches of First Bank of Nigeria PLC. as case study. Demographic statistics was used to analyze the demographic information of the respondents; these included the use of frequency and percentage.

**Table 4.1: Demographic Information about the Respondents**

Variables	Frequency Distribution	Percentage (%)
<b>Sex</b>		
Male	70	58.3
Female	50	41.7
Total	120	100
<b>Marital Status</b>		
Single	40	33.3
Married	50	41.8
Divorced	20	16.7
Widow	10	9.2
Total	120	100
<b>Educational Qualification</b>		
M.Sc./MBA	20	16.7
B.Sc./BA/B/Ed./HND	50	41.7
ICAN/NIM/CIPM/CIBN	10	9.2
OND/NCE	40	33.3
Total	120	100
<b>Status</b>		
Top-Management	10	8.3
Managers	20	16.6
Other employees	90	75.1
Total	120	100
<b>Work Experience</b>		
Less than 2 yrs	30	25.0
yrs - 4 yrs	40	33.3
5 yrs – 7 yrs	35	29.9
8 yrs & above	15	13.5
Total	120	100
<b>Age Limit</b>		
Less than 25 yrs	15	13.5

25 yrs – 35 yrs	40	33.3
36 yrs– 45 yrs	30	25.0
46 yrs – above	35	29.9
Total	120	100

**Source: Field Survey, 2024**

The above table has information about the demographic status of the respondents. In the gender cadre, 70 respondents were male representing 58.3 % of the respondents while 50 representing 41.8% were female which showed that male respondents are the majority. It is also evident that in the marital status, it is dominated by married respondents with 50 respondents representing 41.7 % followed by single respondents with 40 respondents representing 33.3%, 20 respondents representing 26.7% were divorced, 10 representing 9.2% were widow and there is no record of widower. The implication of this information is that the respondent's emotional crisis or trauma is minimal and relatively stable which means they are in best frame of mind to answer questions without prejudice. The educational qualification responses has that majority of the respondents are with first degree with 50 respondents representing 41.7% followed by OND/NCE respondents with 40 respondents representing 33.3%, it is crystal clear that the respondents have what it takes to understand the questions. Without undue influence and also know the confidentiality and the essence of research hence would not hoard any information. From the work experience responses, majority of the respondents were found in the range of 2yrs - 4 yrs with 40 respondents representing 33.3% followed by 35 respondents in the range of between 5 yrs - 7 yrs representing 29.9%. On the status of the respondents, 10 representing (8.3%) were top-Management executive, 20 representing (16.6%) were Managers, while 90 representing (75.1%) were other employees of First Bank of Nigeria PLC. As per the years of experience, 30 respondents indicated that they have worked for less than 2 years representing (25.0%), 40 respondents have worked between 2-4 years representing (33.3%), 30 respondents have worked within 5-7 years representing (29.9%), 15 respondents have worked within 8 years and above representing (13.5%). From the age limit responses, the respondents in the age bracket of 25 - 35 yrs were found to be in the majority with 40 respondents representing 33.3%, the implication is that the respondents are matured and can give candid information without fear or favor.

#### **4.1.2 Answering of Research Questions**

This section presents the result of this study based on the data analysis. They were presented on the basis of the five research questions and two null hypotheses that guided the study. The researcher used 3.00 as the mean otherwise known as decision mean since the instrument was structured along a modified five-point Likert scale

structure to take decision on whether to accept or reject the research questions after comparing it with the qualitative mean. Therefore, a mean score of 3.00 indicate positive response to the research question and accepted while a mean score below 3.00 indicate negative answer to the research question and rejected.

This is shown below:

- SA                    5 points
- A                     4 points
- UD                  3 points
- SD                  2 points
- D                    1 point

$$\frac{.....5 + 4 + 3 + 2 + 1.....}{5} = 3.00 \text{ Decision mean}$$

**Research Question One:**

What is the nature of training and development practice in First Bank of Nigeria PLC?

**Table 4.1.1 Mean and Standard Deviation Ratings of the nature of training and development practice in First Bank of Nigeria PLC?**

S/No.	Questionnaire Items	Mean	SD	Decision
1.	Training need assessments are conducted properly	4.22	1.05	Agreed
2.	The selection for training is based on proper need assessment	3.99	0.97	Agreed
3.	The organization assesses the trainee’s knowledge before selecting the training program	4.01	0.99	Agreed
4.	Employees attend the trainings that fit departments’ needs with the alignment of the organization’s objective.	4.05	1.05	Agreed



Table 4.1.1 indicates that nature of training and development practice impacts positively on the employees of First Bank of Nigeria PLC. This is represented by the mean ratings of between 3.99 and 4.22 while the standard deviation (SD) ranges between 0.97 and 1.05 respectively. The items are therefore rated Agreed (A) by the staff and students of Care and Cuddle Schools in Jahi, Abuja Nigeria.

### Research Question Two:

What is the extent to which training and development has affected the knowledge, skills and morale of employees of First Bank of Nigeria PLC?

**Table 4.1.2 Mean and Standard Deviation Ratings of the extent to which training and development has affected the knowledge, skills and morale of First Bank of Nigeria PLC**

S/No.	Questionnaire Item	Mean	SD	
5.	The training I have taken is relevant to my job	4.31	1.08	Agreed
6.	The method of training used by the organization is relevant to the training objectives	4.20	1.10	Agreed
7.	There are defined criteria for training and development at the organization	3.46	1.06	Agreed
8.	There is opportunity for career development after receiving trainings	3.56	1.09	Agreed

The respondents agreed that the training and development have improved the employees' knowledge, skills and morale at First Bank of Nigeria PLC. This is evidenced in Table 4.1.2 by the mean ratings of between 3.46 and 4.31 and the standard deviation (SD) of between 1.05 and 1,10 respectively. The items are therefore rated Agreed (A) by the respondents.

### Research Question Three:

What is the extent to which training and management development has reduced production time and wastage of materials at First Bank of Nigeria PLC?

**Table 4.1.3: Mean and Standard Deviation ratings of the extent to which training and management development has reduced production time and wastage of materials at First Bank of Nigeria PLC**

S/No.	Questionnaire Items	Mean	SD	Decision
9.	Training and development reduces production time and wastage of materials in my organization	3.99	0.95	Agreed
10.	Training on efficient use of production resources reduces avoidable waste of materials in my organization	4.01	1.01	Agreed
11.	Training enhances the knowledge, skills, abilities and morales of the employee	3.92	1.08	Agreed
12.	Training and development boost organizational efficiency, profitability and performance	3.90	1.09	Agreed

Respondents in 4.1.3 above accepted that training and development has reduced production time and wastage of materials at the First Bank of Nigeria PLC. This is evidenced with the high mean ratings ranging between 3.90 and 4.01 and the standard deviation (SD) of between 0.95 and 1.09 respectively. Hence, all the items were favorably rated Agreed (A) by the respondents.

**Research Question Four:**

What Is the extent to which the benefits derived from training and development affected overall performance of the First Bank of Nigeria PLC?

**Table 4.1.4: Mean and Standard Deviation Ratings of the extent to which the benefits derived from training and development affected overall performance at the First Bank of Nigeria PLC**

S/No,	Questionnaire Items	Mean	SD	Decisions
13.	Trainings are important in improving the employees’ performance to give quality service	4.24	1.05	Agreed
14.	Employees become more committed toward their jobs after receiving trainings	3.92	1.07	Agreed
15.	Trainings enhances job performance and motivate employees to be fully engaged to the company	3.99	1.10	Agreed
16.	Employees become more responsible after receiving trainings	3.91	1.06	Agreed

Table 4.1.4 indicates that the respondents are of the opinion that training and development is beneficial to the employees as well as improving organizational performance. The mean score ratings range between 3.91 and 4.24 while the standard deviation (SD) range between 1.05 and 1.10 respectively.

#### 4.2 Test of Hypotheses

The following hypotheses will be tested at 0.05 level of significance.

**Table 4.2: Tests of Hypotheses on Ho1 and Ho2**

S/No.	Hypotheses	Category of Respondents	N	- X	SD	T-CD	DF	T.TAB	Decision
1.	There is no significance difference between the mean ratings and opinions of male and female staff of First Bank of Nigeria PLC	Males  Females	70  50	4.01	1.05	-4.62	541	1.96	Accepted
2.	There is no significant difference between the mean ratings and opinions of top-Management executive and other employees of First Bank of Nigeria PLC	Top-Management & other Managers  Other employees	70  50	3.89	1.01	-1.62	541	1.96	Accepted

##### 4.2.1 Hypothesis One (Ho1):

Hypothesis (Ho1) states that there is no significant difference between the mean ratings and opinions of both male and female staff with regards to the impacts of training and management development on organizational performance adopting a cases study of selected branches of First Bank of Nigeria PLC. The above hypothesis

was tested at 0.05 alpha level of significance. From the Table 4.2 above, the calculated t-values (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho1) is therefore accepted.

#### 4.2.2 Hypothesis Two (Ho2):

Hypothesis (Ho2) states that there is no significant difference between the mean ratings and opinions of academic and non-academic staff with regards to the impacts of training and management development on organizational performance (a case study of selected branches of First Bank of Nigeria PLC). This was tested at 0.05 alpha level of significance. From Table 4.2 above, the calculated t-value (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho2) is therefore accepted. Respondents therefore accepted that in all clusters, there is no significant difference between the opinions of male and female staff and top-Management/Managers and other employees of First Bank of Nigeria PLC.

#### 4.3 Summary of Major Findings

The researcher set out to investigate the impact of training and management development on organizational performance adopting a case study of selected branches of First Bank of Nigeria PLC. Based on the analysis of data in chapter four, the study made the following summary of major findings:

- i. That the study shows that all the respondents have attended training programs which used both methods (training and management development) for the training;
- ii. That 70% of the respondents agreed the Bank HR Department identified the training needs ahead of training programs. Also, majority agreed that there exists an effective performance assessment of staff after every training session;
- iii. It was unanimously agreed by the respondents that the Bank have a Training Policy which affects the performance of bot the employees and the organization;
- iv. Only 10% was of the opinion that the selection process for the staff training are influenced by immediate supervisors and/or the HR Department and that same percentage believes that this leads to discrimination when identifying and selecting employees for training.
- v. Applicability of the training on the job is very vital in order to make positive impact on performance and growth of the Bank. Therefore, the research result shows that 95% of the respondents agreed that the training they have taken was applicable. This imperatively improved their skills, knowledge, and attitude (KSA) to work and helped them acquire new capabilities.

- vi. Employees who are trained have more confidence on the job they do which motivates them to do more and derive job satisfaction.

#### 4.4 Discussion of Results

The results indicate that the computed t-values of ( $t=3.898$ ) for Training Needs Assessment ( $t=4.414$ ); for Training and Development Design ( $t=5.464$ ) for Effectiveness of Training and Development Method; ( $t=2.6648$ ) for Implementation of Training and Development and ( $t=4.845$ ) for Evaluation of Training and Development Program on the degree of freedom ( $DF=5$ ). This shows that there is a significant relationship between the dependent and independent variables. This is further reinforced by the p-value (0.000) for Training Need Assessment (0.000); for Training and Development Design (0.000). for Effectiveness of Training and Development Method (.008); for Implementation of Training and Development and (.000) for Evaluation of Training and Development Program are smaller than the significance level of 0.05. This indicates that there is a significant relationship between Training Assessment, Training and Development Design, Effectiveness of Training and Development Method, Implementation of Training and Development and Evaluation of Training and Development Program on organizational performance in the selected branches of First Bank of Nigeria PLC. I

#### 5.0 Study Implications, Conclusion and Recommendations

This section presents the summary of the study, implications of the research findings, conclusion drawn, recommendations based on the findings of the study, and a direction for further studies in this subject matter.

#### 5.6 Implications of the Research Findings

This research study has drawn some implications based on the research findings. From the study conducted it was found out that training of employees is one of the activities of the HR Department of the First Bank of Nigeria PLC. The human resource division will work with managers to empower them to fill the identified knowledge. Managers will be responsible for setting training and development priorities and building learning in their daily management practices.

It was also gathered from the study that one of the reasons of training and development at the First Bank of Nigeria PLC is to achieve individual and organizational performance. Data was presented and analyzed regarding the actual training programs on the ground for training and development at First Bank of Nigeria PLC. With regard to the delivery method of training used by the organization, majority of the respondents feel comfortable and agreed that the organization training delivery method is convenient to get the necessary

knowledge and skills. According to Braga (1985), training and delivery style is a very important part of training and development. Ospina and Watad (1999) opine that for employees in an organization to be able to perform their duties and make meaningful contribution to the success of the organizational goals or objectives they need to acquire the relevant skills and knowledge, however, the result indicated from the respondents even if there are some points that make employees committed to accomplish the organization objectives, majority of the respondents are not committed and unable to accomplish the organization objectives. Therefore, it becomes important for organizations to determine the training and development needs of its employees, through its training need analysis, and align such needs to the organizational overall needs and objectives in order to actualize the organizational vision and mission.

### 5.7 Conclusion

The general objective of the study is to investigate the impact of training and management development on organizational performance adopting a case study of selected branches of First Bank of Nigeria PLC. In the meantime, the study raised basic research problems and addressed the specific objectives. The study concludes that training need assessment significantly influenced employee performance; this was associated to the fact that the company had regular skills set evaluation that bring out areas of deficiency that employees were to be trained. The study further established that evaluation of training program significantly organizational performance since there was a well-organized orientation program for its entire new staff.

### 5.8 Recommendations Based on Research Findings

In the light of the findings and conclusion of the study, the following recommendations are made which if adopted would make the training function of the Human Resource Department of the Bank more productive and efficient.

- i. Banks prioritize the issue of training of its employee because it is one of the best known ways of motivating employees, this can be attributed to the fact that employees learn relevant skills necessary for the performance of their jobs when they attend training programs. However, management hardly allows employees embark on personal development programs, this is another medium that can be used in motivating employees.
- ii. Seminars and workshops should be organized for the Human Resource Department on the importance of systematic approach of training and proper procedure to follow in identifying skill gaps in the various departments.

- iii. Heads of Department should be sensitized on the importance of sending the right employee on training. They should not see training opportunities as pay back opportunities to loyalists and should be discouraged by the Management.
- iv. The Bank Management should develop an efficient This will help and effective Training Policy to check the issues mentioned in the above recommendation.
- v. Management should ensure that training is provided for both the present and future challenges that bank staff are bound to face.. This will help in ensuring that not only will bankers be able to deal with the issues that they encounter in their present jobs, they will also be prepared to take on challenges that they will face in the future. Training employees for possible future challenges will ensure that they are adequately equipped if there is a need for an employee to be given additional responsibilities/promotion within short notice.

### 5.9 Suggestions for Further Studies

The impact of training and development on organizational performance and research analysis carried out under a limited scope of specimen, Also, the impact of training was highly emphasized which serves as a good basis for further future studies on same topic by researchers who are ready to throw more light on the research topic.

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## AN ASSESSMENT OF THE IMPACT OF ENTREPRENEURSHIP DEVELOPMENT ON JOB CREATION IN NIGERIA: A STUDY OF WUSE MARKET, ABUJA

**DR CHUKWUEMEKA G. EME (PhD)**

**Department of Business Administration, Faculty of Management**

**Sciences, National Open University of Nigeria (NOUN), Jabi,**

**Abuja, Nigeria; Tel: +234, 1, 904, 992, 9862;**

**E-Mail: [ceme@noun.edu.ng](mailto:ceme@noun.edu.ng); [kaluxhukwuemeka26@yahoo.co.yk](mailto:kaluxhukwuemeka26@yahoo.co.yk)**

### ABSTRACT

Low level of economic activities of a nation leads to low level of job creation. Sourcing an alternative way of improving economic activities and human resources development will improve the level of job creation in the country. In Nigeria, economic activities are strangulated which leads to low job opportunities. There is the need therefore, to find alternative means of improving economic activities for human resources development and job creation. Entrepreneurship development was highlighted as a panacea for solving the economic problems of the jobless members of the society, especially the skilled graduates. The study empirically examined the impact of entrepreneurship development in job creation in Nigeria adopting the Wuse Market, Abuja, FCT, Nigeria as a case study. The study made use of descriptive survey research design that allows for the use of questionnaire to elicit data from the respondents. The population of this study was 1,200 traders at the Wuse Market, FCT, Abuja, Nigeria out of which 120 traders were selected (that is, 10% of the total population) using the simple random sampling technique. Questionnaire was the primary instrument used to elicit information from the respondents. The research data was analyzed using both descriptive and inferential statistics; simple percentage, mean score and standard deviation. The hypotheses were tested using inferential statistics (the independent t-test). The results suggest that there exists a positive and significant relationship between entrepreneurship and job creation/poverty alleviation. There exists significant relationship between entrepreneurial development and income accruable from entrepreneurship. The study therefore recommends that government at all levels should improve on the level of awareness of the benefit of entrepreneurship in individual households as it relates to poverty alleviation. There should be collaboration between small business entrepreneurs and research institutions for exploitation and research findings of those institutions to achieve technological development.

**Key Words: Entrepreneurship development, Job-Creation, Wuse-Market, Abuja-FCT, Nigeria**

## 1.0 Introduction

The prosperity and progress of a nation depends on the quality of its people. If they are enterprising, ambitious and courageous enough to bear the risk, the community/society will develop quickly. Such people are identified as entrepreneurs and their character reflects entrepreneurship. Entrepreneurship is no monopoly of any religion or community. Business Timus (1985) emphasized that entrepreneurial potential can be found and developed anywhere irrespective of age, qualification, experience or socio-economic background, only efforts are required in the right direction. Entrepreneurship many not be regarded as a sufficient condition for growth activity but is surely a necessary condition (Destipande, 1984, hence, it must be given top priority in the national programs of a country. It is widely acknowledged in entrepreneurship literature that entrepreneurship is about people who realize new opportunities. Entrepreneurs are persistent, passionate, adaptable and able to take risks. As a result, entrepreneurship can occur in a range of environments. However, at the core of entrepreneurship lies the creation of new business ventures by individuals or teams (Timmons, 1999).

Entrepreneurial activities drive economic growth and job creation (Baumol, 1996; Mair & Marti, 2009; Schumpeter, 1934). Over the past few decades, national and sub-national government worldwide have increasingly focused on engaging more people in the market activities with an assumption that markets play a crucial role in attaining sustained increases in living standards (Mair & Marti; Van Stel & Storey, 2002). A growing degree of uncertainty in the world economy evidenced by rising unemployment levels, stalled rate of job creation, and muted economic growth. Consequently, policymakers are paying considerable attention to the specific role of start-ups and high investment in research and development (R&D) as possible job creation strategies (Acs & Armington, 2006; Fritsch, 2004; Schramm, 2009; Van Stel & Storey, 2003).

Entrepreneurship has been seen by many researchers as the driver of the society (Fredrick, Kuratco & Hodgets, 2007). For example, they had been lauded for their contributions to things such as national employment, society building, innovation, economic development, community regeneration, etc (e.g. Fredrick, Kuratco & Hodgets, 2017).

Entrepreneurship is the process of doing something that's new and something that is different for the purpose of creating wealth for the people and adding value to the society, whereas economic growth and development is an increase in the productive capacity of an economic produce of goods and services from one period of time to another.

Job creation is vital to the wellbeing of an economy and has become an urgent national priority following the recent economic meltdown in many countries of the world. Job creation is the sum of positive employment

changes at the establishment level in a given time interval and in a specific industry (Yeiyale, 2022). The sum of job creation is measured in employment reshuffle across establishments. Job creation is devoting one's labor time to achieve economic task. Job creation is a self-created position for exerting own efforts directly to business creation. According to Lowrey (2012), entrepreneurs do not only create jobs, but also supply labor force in the market. The effort of transforming labor force and other human capital in the creation of new enterprises and jobs, should be taken into account in assessing actual number of total labor inputs. Sanchez (2010) observes that during the last decade, entrepreneurs have been at considerable increase level with the aim of creating jobs and businesses.

Employment generation has over the years been widely recognized as major paths to socio-economic progress. Indeed, employment generation has been among the cardinal macro-economic objectives of most governments in developing world (Ogwumike, 2013). As noted by Seers (2012), growth accompanied by reduction in unemployment is one of the principal indicators of economic development. In Nigeria, the menace of unemployment and poverty cannot be over-emphasized. This twin problem has plagued the country especially from the mid-1980s to date. Unemployment has become a serious problem that must be tackled with sincerity of purpose to keep the nation's youths productively engaged and out of avoidable troubles. With 50 per cent open unemployment, Nigeria is not sitting on a time bomb but as we can see, the bombs are exploding in scores through murderous insurgencies (Aremu, 2014). The need for entrepreneurial development in the country today is necessitated by the fact that entrepreneurial development is a major factor in economic growth and development and also the permanent cure for extreme hunger and poverty necessitated by unemployment. Entrepreneurship is something we ignore at our own peril. The experiences of developed economies in relation to the roles played by entrepreneurship cannot be overemphasized especially among the developing countries (Anyadike et al., 2012). Entrepreneurship has been variously referred to as a source of employment generation. This is because entrepreneurial activities have been found to be capable of making positive impacts on the economy of a nation and the quality of life of the people (Adejumo, 2010).

In spite of the fact that entrepreneurial development has been regarded as the bulwark for employment generation, poverty reduction and technological development in Nigeria, the country nevertheless has had its own fair share of neglect. This is as a result of over-reliance on crude oil by the Nigerian government which consequently had accompanying unpleasant consequences on the economy which includes pronounced open unemployment, underemployment and high incidence of poverty. In Nigeria, the menace of unemployment cannot be overemphasized. This problem has continued to plague the country especially from the mid-1980s to date. These problems initially led to the introduction of a macroeconomic stabilization package in 1981 and

later to various rounds of budget – fighting austerity measures between 1981 and 1985. Despite these measures and other incentives, policies, programs and support, the problems apparently remained unabated. The nature of Nigeria’s unemployment problems epitomized by the passive imbalance between job creation expectation and opportunities for the increasing pool of educated unemployed and underemployed rising to a number of important and challenging policies for which answers based on a robust and sound quality framework must be sought. Unfortunately, Nigerians are beginning to realize that the white-collar jobs are not enough and that crude oil no longer creates jobs in the economy as a result of the recent free fall in oil prices whose implication has led to exchange rate volatility, savings stagnation, debt spiking, capital expenditure threat and unemployment which the Nigeria Bureau of Statistics in its first quarterly report of 2015 has already placed unemployment rate to have jumped to 7.5 percent in the first quarter of the year 2015. These problems have led unemployed graduates to consider entrepreneurship in the form of vocational enterprises and small and medium scale enterprises (SMEs) by resorting to the skills which they acquired through entrepreneurial education in school as solution to the persistently increasing poverty and unemployment which would in turn lead to economic growth and development.

These steps however have faced a lot of constraints which ranges from political instability undercapitalization with difficulty to obtain bank credit, lack of adequate youth empowerment scheme, decaying infrastructure, corruption, lack of technical know-how, and enabling environment through tax exemptions. As opined by Okoye, Iloanya and Udenze (2014), the need for entrepreneurial development in the country today is necessitated by the fact that entrepreneurship development is a major factor in economic growth and business development and also a permanent cure for extreme hunger and poverty necessitated by unemployment.

Entrepreneurship, when and if gallantly developed in Nigeria will take its pride of place in quelling unemployment and thus generating employment among Nigerian youths especially the graduates and once again, place the economy on a proper footing. There has not been any clear study on the impact of entrepreneurial development in job creation in Nigeria tailored towards skill and vocational development, job creation and youth empowerment. It is in this respect this study seeks to assess the impacts of entrepreneurial development in job creation in Nigeria, adopting the Wuse Market, FCT, Abuja as the case study.

### **1.5 Statement of the Research Problem**

A good life is part of every man’s dream. Poverty is sometimes super-imposed on man by nature and the predicament man finds himself in. A critical assessment of this state of man and a well- organized plan for life can gradually push away the problems. This explains why entrepreneurial development is very essential as a vehicle for job creation, particularly for the teeming youthful population of Nigerian graduates. This is because

of the re-awakening to the reality that White-collar jobs are infrequent or almost not available for the teeming population of Nigerian youthful graduates. Hence, succeeding governments in Nigeria have crafted several programs and policies, particularly the National Agency for Poverty Alleviation Program (NAPEP), National Directorate for Employment (NDE), etc., which could not eradicate unemployment and poverty reduction among the citizenry, particularly the Nigerian youthful graduates. This is where entrepreneurial development in form of skill acquisition programs comes in handy as a panacea to providing a permanent cure to this social malady and national disaster. It is in this respect that this study that seeks to assess/investigate the impacts of entrepreneurial development in job creation in Nigeira (a case study of Wuse Market in FCT, Abuja, Nigeria) is very relevant and necessary for a critical study and equally justified.

### **1.6 Objectives of the Study**

The main objective of the study is to assess the impacts of entrepreneurial development in job creation in Nigeria adopting the Wuse Market, FCT, Abuja as a case study. The specific objectives of the study were:

- i. To determine the extent to which entrepreneurship development leads to job creation;
- ii. To ascertain whether entrepreneurship development has effect on the improvement of the level of income;
- iii. To examine the relationship between entrepreneurial development and poverty reduction;
- iv. To determine the relationship between entrepreneurial development and challenges facing economic development;
- v. To assess the relationship between entrepreneurship development and eradication of unemployment among Nigerians.

### **1.3 Research Questions**

In line with the purpose of this study, the following research questions were formulated.

- i. What is the extent to which entrepreneurship development leads to job creation?
- ii. Does entrepreneurship development have any effect on the improvement of the level of income?
- iii. What is the relationship between entrepreneurship development and poverty reduction?
- iv. What is the relationship between entrepreneurial development and the challenges of economic development?
- v. What is the relationship between entrepreneurial development and eradication of unemployment among Nigerians?

#### **1.4 Research Hypotheses**

In line with the purpose of this study, the following null hypotheses were formulated and will be tested at 0.05 alpha level of significance.

Ho1: There is no significant difference between the opinions of male and female respondents in Wuse Market, Abuja FCT.

Ho2: There is no significant difference between the opinions of market masters and other traders in Wuse Market, Abuja, FCT.

#### **1.5 Significance of the Study**

The importance of doing a study on entrepreneurial development cannot be over-emphasized, given the devastating and widespread effects of unemployment in Nigeria and its possibility of creating jobs for the army of the unemployed and also generating the needed economic activities to spur economic growth. The outcome of this study is expected to provide the Government and the Ministry of Economic Planning the basic understanding of the dynamics of tackling unemployment problem under the new drive towards entrepreneurial programs in Nigeria and has provided an option for adoption of appropriate policy to tackle the challenges posed by unemployment headlong.

Again, this study would be very useful to academics and students of Management Sciences, as it would add to the body of knowledge, enrich and fill the research gaps in this area of study, serve as lecture notes for academics and spur them up to undertake further research in this study area. To the students, this study will enhance their understanding of entrepreneurship development and job creation, giving them the necessary skill acquisition tips as tomorrow's entrepreneurs.

#### **1.6 Scope of the Study**

This study examines the impact of entrepreneurial development in job creation in Nigeria adopting the Customary Court of Appeal, Jabi, FCT, Abuja as case study. In this study, the dependent variable shall be job creation, while the independent variable shall be entrepreneurial development. It is expected that as government's initiatives, programs and policies are being unfolded more job opportunities should be created for gainful employment in Nigeria.

### **2.0 Review of Related Literature**

This section reviews related literature in the subject area of study. It is sub-divided into four major sections. The first section incorporates the conceptual framework which reviewed the basic concepts as used in the study. The second section dealt with the theoretical framework, which discusses the theories that underpins or anchored the



study. The third section is based on the review of related empirical studies, while the fourth section focuses on the summary of reviewed literature.

## 2.1 Conceptual Framework

The term ‘‘entrepreneurship’’ originated from the French word ‘‘entrepede’’ which means ‘‘to undertake’’ ‘‘Venture and encroach’’ (Okoro and Ofishe, 2011). The concept of entrepreneurship as an organized knowledge came into being about hundred years ago; though the economists from Adam Smith to Marshall were talking about it, but without assigning the name of entrepreneurship. They used the terms as employer, the master, the merchant and the undertaker for carrying out different entrepreneurial activities now comprising of entrepreneurship. It was Richard Cantillon, during the 17<sup>th</sup> century who first brought out the term entrepreneur (Marthy, 1989), and entrepreneurship was recognized in economic literature. An entrepreneur is a person while entrepreneurship is the process of its actual working. Entrepreneurship is also consistently equated with the establishment and management of small business enterprises. In United States, the entrepreneur is also often defined as one who starts his own, new and small business.

The present situation in Nigeria where skilled graduates are seen roaming the streets without jobs has more than ever before stressed the need for improving the economy of the nation’s industrial sectors which is the major job provider for the youths. It is the view of this study that the cause of skilled graduate joblessness in the country is as a result of lack of entrepreneurship education and development. In this section, the concepts and definitions that are related to the study are discussed.

### 2.1.1 Entrepreneurship and Entrepreneurial Development

Entrepreneurship is a process undertaken byn the government to reduce the level of poverty in the economy. It also encompasses creating innovation, promoting new sets of attitudes, and culture for the attainment of future challenges (Arogundade, 2011). This view is supported by Ogundele (2014) who opined that the promotion and development of entrepreneurial activities would aid the dispersal and diversification of economic activities, and induce even development in a country. Similarly, Osuagwu (2016) defined entrepreneurship as a catalyst to increase the rate of economic growth, creating job opportunities as well as reducing the dependence on the import of manufactured products.

Considerable attention has focused on the definition of the term ‘‘entrepreneur’’. Schumpeter (1959) considered the entrepreneur as an innovator. He writes that Entrepreneurship is the ‘‘carrying out of new combination we call enterprise, the individuals whose function is to carry them out we call entrepreneurs. The new industrial

organizations. new combination focuses on five aspects (Schumpeter, 1934). The introduction of new goals, new methods of production, opening up of new markets, new sources of supply of raw material and new organizations. Say (1964) uses the term entrepreneur to refer to someone who creates and perhaps, operates a new business firm whether or not there is anything innovative in those acts. Baumol (1993) sees the “Schumpeter” type as an innovating entrepreneur and the “Say” type as the firm-organizing entrepreneur. People who get ideas for creating a new business, bring that business into existence and then carry on the work of the enterprise, are entrepreneurs (Jena, 1989). Precisely, an entrepreneur is one who undertakes to organize, manage, and assume the risks of a business. Even a small business unit owner is an entrepreneur and his activities are the entrepreneurship. Entrepreneurship according to Anyadike, Emeh & Ukah (2012) is more than simply “starting a business.” They opined that it is a process through which individuals identify opportunities, allocate resources, and create value. This creation of value according to them is often through the identification of unmet needs or through the identification of opportunities for change. It is the act of being an entrepreneur which is seen as “one who undertakes innovations with finance and business acumen in an effort to transform innovations into economic goods. Hence, entrepreneurs see “problems” as “opportunities” and then take action to identify the solutions to those problems and the customers who will pay to have those problems solved.

Entrepreneurial success is simply a function of the ability of an entrepreneur to see opportunities in the marketplace. Initiate change (or take advantage of change) and creates value through solutions. Entrepreneurship is known as the capacity and attitude of a person or group of persons to undertake ventures with the probability of success or failure. It demands that the individual should be prepared to assume a reasonable degree of risks; be a good leader in addition to being highly innovative. In Business Management, entrepreneurship is regarded as the “prime mover” of a successful enterprise just as a leader in any organization must be the environmental change agents (Anyadike, Emeh and Ukah, 2012).

Entrepreneurship according to Walter (2014) can be defined in terms of the following three essentials and linked attributes: (i) Ability to perceive profitable business opportunities. (ii) Willingness to act on what is perceived, and (iii) the necessary organizing skills associated with the project. Therefore, entrepreneurship refers to the act or process of identifying business opportunities and organizing to initiate a successful business activity. Entrepreneurship is different from management as entrepreneurship; using the words of Stoner, Freeman and Gilbreth (2005) involves initiating changes in production, whereas management involves the ongoing coordination of the production process. They stated further that, entrepreneurship refers to one of the

ways of making organizations to be adaptive. It is the practice of corporate entrepreneurship where begin and develop new business ventures within the structure of an existing organization.

As relating to entrepreneurial development, Shepherd and Douglas (2014) observed that the essence of entrepreneurial development is the ability to envision and chart a course for a new business venture by combining information from the functional disciplines and from the external environment in the context of the extraordinary uncertainty and ambiguity which faces a new business venture. It then manifests itself in creative strategies, innovative tactics, uncanny perception of trends and market mood changes and courageous leadership. To the duo, entrepreneurship, when treated as ‘enterprise creations’ helps develop new skills that can be applied to many other challenging areas in life. More importantly, Schnurr and Newing (2015) justified the need for promoting entrepreneurship culture on the ground that youth in all societies have sterling qualities such as resourcefulness, initiative, drive, imagination, enthusiasm, zest, dash, ambition, energy, boldness, audacity and courage which are all variable traits for entrepreneurship and entrepreneurial development

Supporting this assertion, Bennell, (2014) maintained that governments, NGOs and international bodies seeking to improve youth livelihoods could best pursue their empowerment objective by tapping into the dynamism of young people and build on their strong spirit of risk-taking through entrepreneurship development. Entrepreneurship development has also led to employment generation, growth of the economy and sustainable development.

The current number of colleges and universities offering small business management and entrepreneurship development program has grown from one university in 1947 to over 160 in the 1990s (Solomon and Fernald, 2014; Solomon et al., 2014. White and Kenyon (2014) also found a ‘flourishing youth enterprise culture’ in the United Kingdom among young entrepreneurs aged 18-24 years.

### **2.1.2 Entrepreneurial Development and Job Creation**

Entrepreneurial development is steering the direction of an enterprise by considering various internal and external factors while inculcating creativity with relevant ideologies and resources to an existing enterprise. Akiri et al. (2016) mentioned most economies are comprised of active and inactive populations. The population willing and able to work are referred to as the economically active (Akiri et al., 2015). This inclusion encompasses the unemployed and people strongly engaged in the production of goods and services.

Nkechi et al. (2015) describes job creation as the ability of a nation to engage the economically active members of the populace who have no jobs but are willing to work, those who lost their various jobs and those who left their places of work voluntarily through a more solid path called entrepreneurial development. Job

creation/employment is negatively associated to unemployment; this is evident because in a situation where people willing and capable of taking up jobs are able to get paid employment, unemployment ceases to exist (Nkechi et al., 2015; as cited in Fajana, 2000).

Entrepreneurial development and job creation can be said to be a state where people are able to establish proficient businesses, acquire and sustain reasonable paying jobs. Idam and Linus Egwu (2014) mentioned that entrepreneurial development and job creation are relevant matters which any government must try to encourage to an optimum appreciable level, because the higher rate of unemployment can negatively trigger increase in poverty level, decreased the standard of living, high level of social vices etc. Ikebujo (2020), averred that sustainable progress in Nigeria can be gainfully realized via entrepreneurial development as this, would impel the nation toward attaining her ambition of expanding employment generation.

### **2.1.3 Job Creation and Sustainability through Entrepreneurial Development**

Education is important in the growth of all economies as it has contributed to economic growth and job creation (Agwu et al., 2017). Education is a sustainable development that enables individuals to acquire knowledge, values and skills needed to make decisions as to how things can be done collectively either from the local or global perspective with the aim to improve the quality of life now and in the future. Entrepreneurs reasonably contribute to social and economic states of the nation via development of strategies and capabilities needed for proper coordination of resources, innovation and freedom of creativity (Adelejan and Tijani, 2017; as cited in Shariff and Saud, 2009). Entrepreneurial training serves as a way to develop the mind that bore creativity and equip such minds with meaningful skills that will sustain and increase creativity (Stoula, 2015; as cited in Singer et al., 2012). Societies today are strengthened not just by knowledge or information but by human innovation. Creativity is limitless as it spreads its tentacles of diversification. However, it is credible to understand that creativity is heightened when there is room for ethnic diversification and interaction. Economic creativity (employment creation) is related to diversity.

### **2.1.4 Entrepreneurship and Poverty Reduction in Nigeria**

Detailed and historical validation has provided comprehensive empirical evidence on the link between entrepreneurship and poverty reduction in Nigeria. According to Ajakaiye and Okunola, 2003; Ariyo and Jerome (2005), poverty is associated with lack of dignity, status security and hope. There is general consensus in the literature that growth is actually necessary but not sufficient for poverty reduction. Revallion and Datt

(2002) were of the opinion that for growth to take have some meaningful impact on poverty, it must be accompanied with private sectors' participation through entrepreneurship.

Entrepreneurs were seen as agent of social and economic change according to Ogundele and Olayemi (2004). They were of the opinion that entrepreneurship training will equip the people with skills for constant improvement and innovation. In another study conducted by Timmons and Spinelli (2004) they were of the opinion that the entrepreneurship act can be learnt. Wiklund (1999) asserted that entrepreneurial behavior orientation comprises of two components namely action orientation which results into actual entrepreneurial behavior and mental orientation which is not necessarily put into action. Finally, according to Alberti et al. (2004) there should be a positive linkage between the entrepreneurship and poverty reduction in the economy.

Woldie and Adersua (2014) noted that the number of business owners continues to increase steadily worldwide. Entrepreneurial activities, particularly in business empower people economically and enable them to contribute more to overall development (Brindley, 2015). Entrepreneurial activities are not only a means for economic development but also have positive social impacts for the individual family and their social environment.

Studies carried out by World Bank (2013) showed that Entrepreneurs contributed a lot to the economy through engaging in business activities. Looking at statistics from the National Bureau of Statistics (2009), manufacturing-services-sector contributes to 48 percent of the 1.5 million micro, small and medium size enterprises (MSMEs). Most of these businesses are in the informal sector which accounts for 85 percent and two-third of this population is in the rural areas. The medium and small micro enterprises generate close to 20% of the GDP (Gross Domestic Product).

Involvement in these entrepreneurial activities help in the poverty alleviation efforts. Nigeria aims to reduce poverty level to less than 20% by the year 2020 (Kimani & Kombo, 2010). Entrepreneurs can work towards this mission of poverty reduction by carrying out various measures such as encouraging the education of children in entrepreneurial studies, reduce overreliance on subsistence farming, having access to medical and healthcare facilities.

### **2.1.5 RELATIONSHIP BETWEEN ENTREPRENEURIAL DEVELOPMENT AND ECONOMIC DEVELOPMENT**

Engagement in small businesses often thought of in the past as non-productive is now serving to stimulate the production and consumption in the local economy as well as supply goods for export trade (IFAD, 1995). As indicated by Nseno and Mana (2013) entrepreneurs have an important role to play in economic development through exporting products that will earn the country a significant amount of foreign exchange. They are able to

understand the market and know what to offer at such time. For example, the potential entrepreneur exports African ornaments, clothing, sculptures and carvings which they modify and change to suit each country's requirements. Customers are able to place orders of the various designs and colors that they need in advance. The promotion of socio-economic development is a critical factor for the sustainable development of any country.

Entrepreneurs identify available resources in the society and turn them over to goods within a short time because they have skills that can be utilized for this to be achieved. Shuban (2011) says that a country has the responsibility to ensure that a conducive environment is created through the establishment of legislative policy and institutional frameworks and mechanisms for the enhancement of entrepreneurship. Such measures are a mark of political and good governance decision she asserts.

### **2.1.6 Relationship between Entrepreneurial Development and Income Empowerment**

Entrepreneurship is very rarely a get-rich-quick business undertaking similar to gambling (Timmons & Spinelli, 2014). Rather, the concept is, in fact, concerned with creating long-term value and consistent cash flow streams for the future through the power of imagination, initiative and innovation. The long-term value creation focus of entrepreneurship requires that the entrepreneur strategizes towards maximizing profits and long-run expansion. Enterprise growth is directly associated with increased demand for productive resources including labour and the payment of realistic and competitive rewards to attract and retain these factor inputs to lend their services to the entrepreneur.

In this context, entrepreneurship offers a reliable source of income earning, not only to the entrepreneur and labour, but other factor inputs. Given the long-term focus and the growth potential of entrepreneurial activities, become more economically independent and confident to confront the challenges of life. It can, therefore, be stated that entrepreneurship promotes income empowerment in an economy. In the modern world, entrepreneurship provides a new approach for fighting poverty and stimulating economic growth in developing countries. Entrepreneurship, to a very large extent, narrows the income gap and delivers a consistent mechanism for earning incomes and thereby reducing income inequality and poverty substantially (Wiklund & Shepherd, 2001).

In practice, entrepreneurship is directly linked to higher productivity. The incentive for higher factor productivity is higher income. In order to sustain higher factor productivity to achieve the long-run growth objective of an enterprise, the entrepreneur must be committed to generating higher incomes in real terms. As

the entrepreneur and labour keep enjoying higher incomes in real terms, they are naturally empowered economically through incomes, which push them above the poverty-line more permanently.

## **2.2 Theoretical Framework**

Several theories abound to serve as platform for the explanation of the nature, processes, manifestations and variables of entrepreneurship. However, the theories that anchor or underpin this study are the Creative Initiation theory, the Inkele and Smith's Need-to-Improve theory, the Entrepreneurship Alertness theory, and the Economic Survival theory. A brief discussion of these theories and their relevance to the study is instructive here.

### **2.2.1 The Creative Initiation Theory**

This theory was espoused by Peter Drucker, a Management guru and acclaimed as the father of Modern Management. In this theory, he stressed the issue of change which in turn informs the search, response and exploitation of opportunities by people in a particular society at a given time. In other words, the theory emphasizes on people's search for a change leading them to develop ideas, scan their environment and establish a business thereby becoming their own boss.

### **2.2.2 Inkele and Smith's Need-to-Improve Theory**

This theory is also one of the reference base for the theoretical understanding of entrepreneurial development, study and endeavor. The theory was supported by the likes of Harbison (1964), Meir (1975); Onwuejeogwu (2013). The theory stands on the exploratory behavior of entrepreneurs which makes people to continually seek for new ideas and better methods. This endless "search" for available, but yet unnoticed opportunities directly link up to Kirzner (2012) and other writers of this mold's formulation.

### **2.2.3 Entrepreneurship Alertness**

The emergence of new ideas and how they can lead to commercialized opportunities is central to the field of entrepreneurship (Baron, 2006; Shane and Venkatranun, 2000; Short, Ketchen, Shook and Ireland, 2010). Explanations for how new opportunities emerge include prior experiences, personal disposition, changes in the broader environment, gaining specific information and being a frustrated user (Galio and Katz, 2001; Shane, 2000; Shepherd, McMullen and Jennings, 2007; Tripsas, 2008). Furthermore, discovering new opportunities has been linked to personal awareness, skills, and insights (Kirzner, 1999; Kaish and Gilad, 1991).



Entrepreneurship Alertness is a process that helps some individuals to be more aware of changes, shifts, opportunities, and overlooked possibilities (Kirzner, 1973; 1979; 1985). Alertness and the development of schemata enables persons to organize and interpret information in various domains of knowledge related to the development of new opportunities (Gaglio and Katz, 2001). Thus, alertness is a concept that has the potential to add substantially to our understanding of how new ideas get initiated and pursued. Despite its potential, alertness remains understudied because we do not have adequate tools to rigorously investigate it. The proponents of this theory believed that this alertness is a common trait that successful entrepreneurs possess.

#### **2.2.4 The Economic Survival Theory**

This theory is adopted by the researcher as the framework for the presentation and better understanding of this research work. The center-piece of the proponents of this theory's argument focuses on what Gilder (1981) referred to as the "movement from poverty to wealth." The theory assumes that entrepreneurship is more prevalent among people who are:

- Oppressed by Marginalization
- Suppressed by Discrimination
- Victimized by Circumstances; and
- Affected by Political Upheavals

According to Mbaegbu (2008), people who fall into this category have to channel their creative abilities to entrepreneurship. The above theory is therefore relevant to this study in the light of the fact that Nigeria as a country, today sits at the precipice of political disintegration arising out of the present state of economic disconnect and unease, occasioned by unemployment, unmitigated level of poverty among her people and other unpalatable socio-economic imbalances.

To grapple with loss of jobs caused by lower capacity utilization, factory closure, forced migration; many Nigerians have adopted this Economic Survival model for sustenance. This theory becomes more appropriate viewed against the backdrop of the high rate of poverty engendered by both educated and uneducated unemployment in the country. Since the jobs are non-existent or negligible in quantity compared to the influx, entrepreneurial endeavor by people has become the only visible alternative.

It is noteworthy that the average Nigerian, and their government at all level including those of the Federal Capital Territory (FCT), Abuja have also come to this realization in full and have therefore set different

machineries and in motion formulated several programs to promote entrepreneurial development in the country towards minimizing poverty.

However, the researcher is of the strong opinion that the position of the Economic Survival Theory cannot be taken hook, line and sinker. While the theory had the capitalist, pro-western Europe industrial outlook, it is pertinent to point out that there exists substantial entrepreneurship indigenous to Nigeria. Secondly, there is the failure or inadequate capturing by the theory of such important things as the desire to develop internal and local capacity as a substitute for foreign ones in the quest for national development. For instance, the Nigerian government is as at today promoting massive cassava production as a means of poverty alleviation at the grassroots, since it is a product that can be produced in most parts of the country. However, the desire to improve export earnings, substitute cassava for imported wheat and regain the over \$10 billion dollars spent on rice and wheat importation and the development of local capacity remains the driving force. Also, many people's desire in today's world to be self-employed and the desire to attain self-actualization through the unleashing of latent talents also inform the entrepreneurial consideration rather than just to keep body and soul together as assumed by the Economic Survival theorists.

### **2.3 Related Empirical Studies**

Several scholars' works and studies abound on the subject matter of Entrepreneurial development. These works often relates to youth empowerment in the form of employment generation, SMEs development for job creation and skill development for self-employment generation, these are all the hallmark of entrepreneurial development efforts.

A study of Entrepreneurial development and employment generation in Nigeria: Problems and prospects were conducted by Anyadike, Emeh and Ukah (2012); the paper took a study of Nigeria's growing unemployment situation and how it increasingly dwindles the potentials of the country, especially following official figures from the Bureau of Statistics that puts the figure at about 20% (about 30 million), which still did not include about 40 million other Nigerian youths captured in World Bank statistics in 2009. They stated that by implication, it means that out of the 150 million Nigerians, 50% are unemployed, or worse still, at least 71% of Nigerian youths are unemployed.

Anyadike et al (2012) stated further that these days, employment creation is no longer the prerogative of government but, a joint effort between the public and private sectors. It is in this regard that their paper seeks a permanent solution to the endemic and pandemic phenomenon in Entrepreneurship development. At the end of the study, having utilized the secondary source of data generation to source data for the study, relying

extensively on current articles from ardent scholars on entrepreneurship development and government statistical documentations, the study made several findings and recommendations among which is that government should make entrepreneurship sellable to the people by inculcating it into the educational curriculum at every strata of the educational sector and also utilize a re-modelled NYSC scheme to educate the youths more on the importance, essence and need for entrepreneurship development especially on a practical basis and then find a means of supporting these entrepreneurship projects cutting across all spheres of the country; and also create enabling environment for entrepreneurship to thrive by ensuring social security and adequate infrastructural facilities (Anyadike et al, 2012).

Likewise, in a study by Tijani, Oyeniyi and Ogunyemi (2013) on the impact of technical entrepreneurial skills on employment generation in small and medium scale enterprises in Lagos State Nigeria, data were collected through administered questionnaire from 37 entrepreneurs in various activities and were analyzed through the use of sample t-test, paired differences, sampled test and simple regression analysis respectively. All the hypotheses were tested at 0.05 level of significance. The Results from the three hypotheses tested revealed that technical entrepreneurial skills generate employment in Small and Medium Enterprises (SMEs) in Nigeria had no significant contribution to the Gross Domestic Product (GDP) of the country due to the identified variables as well as other stochastic variables. It was recommended that all stakeholders especially the Government should redirect and rethink on establishment of technical schools and provision of all business friendly environment factors like; constant power supply, good road networks and others (Tijani et al, 2013).

Chidiebere, Iloanya & Udunze (2014) in their study reveals that the development and transformation of Nigeria and sub-Saharan Africa is highly dependent on youth empowerment through Entrepreneurship. They stated that entrepreneur is the backbone of economic development all over the world and play important role for employment, income and societal changes, particularly in transition economies like Nigeria. The concern of this study was on to what extent can entrepreneurship in Nigeria help to reduce youth unemployment, where they outline the initiative taken by government to curtail unemployment and also the challenges and prospects for the development of entrepreneurship.

The study revealed that such policies and initiative by government has affected the ‘‘transformation question’’. This is due to the increase of corruption, inadequate and inefficient infrastructural facilities and maladministration. The study concludes that entrepreneurship development is an engine for job creation, innovation and diversity, and therefore recommends that Government (policy makers) should genuinely recognize the essence of entrepreneurship to economic development by providing the enabling environment and secured environment for the youth to be gainfully employed for economic development and also provide

adequate infrastructural facilities such as water, electricity, road network, communications etc. (Chidiebere et al, 2014).

A summary of the empirical literatures reviewed above is that there is a broad consensus among policy makers, researchers and practitioners that entrepreneurial development can mitigate the menace of unemployment through job creation in Nigeria and also in the Federal Capital Territory (FCT) Abuja as well thereby getting the youth fully empowered to meet their daily economic needs and desire.

## **2.4 Summary of Reviewed Literature**

From the works reviewed, the opinion of the researcher differs not on the growing unemployment situation in Nigeria. Their emphasis has brought to the fore the need for the ugly condition to be arrested. Hence, their craving for more entrepreneurial development centers to be built to help mitigate the socio-economic effects of this growing unemployment situation. Our study is not an exception in this regard, given that the study area houses high rate of unemployed youths. The study looks at entrepreneurial development in job creation in Nigeria adopting a case study from the Wuse Market, Abuja (FCT), this study is not to lend credence to previous studies on the subject matter of solving unemployment problems through the use of entrepreneurial development initiatives.

## **3.0 Methodology**

The researcher in this section examined the issues concerning research design, population, sample and sampling technique that will be used for this work. The researcher also examined the instrument in collecting data, the validity of the instrument, reliability of the instrument, procedure for data collection, method of data analysis, and limitations of the study. The design for this study is a descriptive survey method. It is used to describe what is existing and to answer the research questions stated by the researcher for the study. The population of this study comprised of all the owners of shops at the Wuse Market, Abuja, FCT., totaling 1,200. The population is made up of 800 males and 400 female traders.

Simple random technique was adopted for this study. In order to achieve a sample size that is representative of the total population, the researcher adopted a 10% of the total population totaling one hundred and twenty (120) traders at the Wuse Market, FCT., Abuja for the study. One research instrument was used for this study which was Questionnaire and it is titled: ‘‘An Assessment of the Impact of Entrepreneurial Development in Job Creation in Nigeria (A Case of Wuse Market, FCT, Abuja)’’ was used to collect data for this study by the researcher. The reason for using questionnaire was based on the following advantages. Firstly, it can give

objective and reliable information of it is carefully and well-constructed. Secondly, it is relatively effective and easier to score and administer. Questionnaire is a good representation of group test and owing to the nature and diversity of the population, questionnaire methods becomes necessary. The questionnaire is divided into three sections to enable the researcher obtain information from the respondents, the questionnaire will be designed in such a way that it provides the following sections: (A), the respondents' personal data, section (B) the respondents' understanding of entrepreneurial development, section (C), the impact of entrepreneurial development on job creation in Wuse Market, FCT, Abuja. The five Likert scale (strongly agreed, agreed, undecided, disagreed and strongly disagreed) questionnaires will be adopted by the researcher. The Likert scale consists of a list of statement that has relationship with the issue in the question, it does not only allow the respondent to check those statements in which they agree or disagree but allows the respondent to state the degree of agreement or disagreement with every statement (Osuala, 2007).

Face and content validity is employed in this study, the researcher employed the help of some Senior Lecturers from the Faculty of Management Sciences, NOUN. After going through the work, they advised the researcher to see a statistician who will scrutinize the objectives of the study, research questions, research hypotheses as well as the methodology of the study. The draft questionnaire was also presented to the project supervisor for necessary corrections and adjustments before the final copy was printed out for use in the research work.

In order to establish the reliability of the instrument, pilot study was carried out. The essence of pilot study was to test the adequacy and suitability of the instrument in measuring what it is supposed to measure and to ascertain any difficulty that the researcher may encounter. For the purpose of this, a total of (12) copies of the questionnaire representing 10% of the total population of study were administered to selected traders at the Wuse Market, FCT, Abuja. They were filled under the supervision of the researcher. The filled questionnaires were collected and subjected to statistical analysis in order to determine the reliability co-efficient of the instrument as well as the internal consistency of the items within the instrument.

The data collected from the pilot study was analyzed using Cronbach Alpha techniques and reliability index of 0.85 was obtained. Bennett (2006) testified that for a scale to be considered reliable, it should have an alpha value of 0.50 to 1. With the level of reliability index of 0.85, the instrument was considered reliable for use in the main study. To administer the validated instrument of the study, an introductory letter was collected from the head of department and presented to the Management of the Traders Association and other traders that were randomly selected. The research assistants were educated on how to distribute the questionnaires and who is qualified to be given the questionnaire.

The analysis of data for this study was done based on the hypotheses formulated. The researcher used descriptive statistical method for bio-data presentation. Measures of relationship between the variables were being carried out using independent t-test. The simple percentage, mean score and standard deviation was used to answer the research questions.

All hypotheses were tested using the independent t-test at 0.05 alpha level of significance like what is obtainable in other social science. The reason for adopting these statistical tools is to test whether there will exist some significant differences or not and either to retain or reject the null hypotheses.

Conducting effective research in Nigeria is not easy due to the fact that most people are reluctant to release information needed for research study. The researcher devoted enough time and effort in making sure that enough data are gathered to accomplish the research work. There is also the constraint of time as the researcher has to carry out the research work alongside his official duties.

#### 4.0 Introduction

This section presents the data collected, the analysis carried out and the discussion of the results obtained. The analysis is presented in sections. The first section presents the frequency and percentage distribution of bio data respondents and nominal questions as responded by respondents. The second section presents the answers to the research questions using descriptive parameters of mean scores and standard deviation. The third section presents the testing and interpretation of the two null hypotheses using parametric statistical techniques of independent t-test. All hypotheses were tested at 0.05 alpha level of significance. The major findings are then revealed before the discussions of the major findings.

#### 4.1 Data Analysis and Interpretation

##### 4.1.1 Analysis of Demographic Information

Descriptive statistics was used to analyze the demographic information of the respondents, these included the use of frequency and percentage.

**Table 4.1.1: Bio-Data of Respondents**

S/No.	Bio-data	Category	Frequency	Percentage (%)
1.	Status	Market Masters	30	25.0
		Traders	70	58.3
		Apprentices	20	16.7
2.	Gender	Male	70	58.3
		Female	50	41.7
5.	Qualifications	M.Sc./M.Ed/MA/MBA	25	30
		B.Sc/B.Ed	20	24
		NCE/OND	50	60
4.	Years of experience	0- 5 years	60	72
		6 - 10years	20	24

		11 - 15 years	20	24
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On the status of the respondents, 30 representing 25% were market masters, 70 representing 58.3% were traders while 20 representing 16.7% were apprentices. Table 4,1,1 above showed that 70 representing 58.3% were males and 50 representing 41.7% were females. According to Table 4.1.1, 25 representing 30% had M.Sc/M.Ed/MA/MBA degree, 20 representing 24% possess B.Sc/B.Ed degree while 50 representing 60% had NCE/OND. On the respondents' working experience, from the table above showed that 60 persons representing (72%) had worked between 0 – 5 years, 20 persons representing (24%) had worked between 6-10 years, while 20 persons representing (24%) had worked between 11 – 15 years respectively.

**4.1.2 Answering of Research Questions**

This section presents the result of this study based on the data analysis. They were presented on the basis of the five research questions and two null hypotheses that guided the study. The researcher used 3.00 as the mean otherwise known as decision mean since the instrument was structured along a modified five Likert scale structure to take decision on whether to accept or reject the research questions after comparing it with the qualitative mean. Therefore, a mean score of 3.00 and above indicate positive response to the research question and accepted while a mean score below 3.00 indicate negative answer to the research question and rejected.

This is shown below:

- SA - 5 points
- A - 4 points
- UD - 3 points
- SD - 2 points
- D - 1 point

$$\frac{\dots\dots\dots 5 + 4 + 3 + 2 + 1 \dots\dots\dots}{5} = \frac{\dots\dots 15 \dots\dots}{5} = 3.00 \text{ (Decision Mean)}$$

**Research Question One:**

What is the extent to which entrepreneurship development lead to job creation?

The data for providing answers to the above research question is presented on Table 4.1.2 below:



**Table 4.1.2: Mean and Standard Deviation Ratings of the extent to which entrepreneurship development lead to job creation in Wuse Market Abuja Nigeria.**

S/No.	Questionnaire Items	Mean	SD	Decision
1.	There is sufficient information on entrepreneurial development in Wuse Market	4.22	1.05	Agreed
2.	Entrepreneurship development for job creation is a good initiative	3.99	0.97	Agreed
<b>Cluster</b>		3.85	1.03	Agreed

The respondents in Table 4.1.2 on the extent to which entrepreneurship development lead to job creation in Wuse Market Abuja FCT, Abuja, Nigeria accepted that entrepreneurship development lead to job creation. The variation of opinions of respondents symbolized by the mean ratings ranges between 3.99 and 4.22 while the standard deviation (SD) ranges between 0.97 and 1.05 respectively.

**Research Question Two:**

Does entrepreneurship development have any effect on the improvement of the level of income?

The data for providing answers to the above research question is provided in Table 4.1.3 below:

**Table 4.1.3: Mean and Standard Deviation Ratings of the Effect of Entrepreneurship Development on the Level of Income in Wuse Market Abuja FCT Nigeria**

S/No.	Questionnaire Items	Mean	SD	Decision
3.	There is significant relationship between entrepreneurial development programs and level of level of income in Wuse Market Abuja	4.31	1.08	Agreed
4.	There is high rating of entrepreneurial development programs and level of income in Wuse Market Abuja FCT, Nigeria	4.20	1.10	Agreed
<b>Cluster</b>		4.20	1.09	Agreed

The respondents in Table 4.1.3 agreed that that entrepreneurial development has a significant positive effect on the level of income of stakeholders in the Wuse Market Abuja FCT, Nigeria. This acceptance was symbolized by the above mean score ratings ranging between 4.20 and 4.31 and the standard deviation ranging between 1.08 and 1.10 respectively.

**Research Question Three:**

What is the relationship between entrepreneurship development and poverty reduction in Wuse Market Abuja FCT, Nigeria?

**Table 4.1.4: Mean Ratings and Standard Deviation of the relationship between entrepreneurial development and poverty reduction in Wuse Market Abuja FCT, Nigeria**

S/No.	Questionnaire Items	Mean	SD	Decision
5.	Entrepreneurship development in terms of effect on job creation is a sine qua non for poverty reduction in Wuse Marker, Abuja FCT, Nigeria	4.01	0.92	Agreed
6.	Entrepreneurship development mitigates against the challenges facing the government in their fight against poverty reduction in Wuse Market Abuja FCT, Nigeria	3.99	0.95	Agreed
Cluster		3.99	0.91	Agreed

The respondents in Table 4.1.4 accepted that there is a significant positive relationship between entrepreneurship and poverty reduction in Wuse Market Abuja FCT, Nigeria. This was symbolized by the mean ratings ranging between 3.99 and 4.01 while the standard deviation (SD) ranges between 0.92 and 0.95 respectively.

**Research Question Four:**

What is the relationship between entrepreneurial development and challenges of economic development?

**Table 4.1.5: Mean and Standard Deviation Ratings of the relationship between entrepreneurial development on challenges of economic development?**

S/No.	Questionnaire Items	Mean	SD	Decision
7.	The identified challenges, viz- corrupt practices, ,inadequate statistics, improper planning of programs etc. are militating against entrepreneurial development in Wuse Market Abuja FCT, Nigeria	4.24	1.05	Agreed
8.	There is adequate manpower in Wuse Market, Abuja, FCT, Nigeria	3.92	1.07	Agreed
Cluster		3.92	1.04	Agreed

Respondents in Table 4.1.5 accepted that there is a significant positive relationship between entrepreneurship development and challenges of economic development in Wuse Market, FCT, Abuja, Nigeria. This was symbolized by the mean ratings ranging between 3.92 and 4.24 while the standard deviation (SD) ranges between 1.05 and 1.07 respectively.

**Research Question Five:**

What is the relationship between entrepreneurial development and unemployment among Nigerians in Wuse Market, Abuja, FCT.?

**Table 4.1.6: Mean and Standard Deviation Ratings of the relationship between entrepreneurial development and unemployment among Nigerians in Wuse Market, Abuja FCT.**

S/No.	Questionnaire Items	Mean	SD	Decision
9.	Entrepreneurial development are effectively tackling unemployment among Nigerians in Wuse Market, Abuja, FCT	4.00	1.06	Agreed
10.	The contribution of Wuse Market Abuja to entrepreneurship development programs is adequate	3.91	1.10	Agreed
Cluster		3.91	1.06	Agreed

Respondents in Table 4.1.6 accepted that there is a positive relationship between entrepreneurial development and unemployment among Nigerians in Wuse Market Abuja FCT. This is as symbolized in the men score

ratings ranging between 3.91 and 4.00 while the standard deviation (SD) ranges between 1.06 and 1.10 respectively.

#### 4.2 Test of Hypotheses

The following hypotheses will be tested at 0.05 alpha level of significance.

**Table 4.2: t-test of Hypotheses on Ho1 and Ho3**

S/No	Hypotheses	Cate gory of Resp	N	- N	SD	T- CD	DF	T. T A B	Decisio n
1.	There is no significant difference between the opinions of male and female respondents in Wuse Market Abuja FCT.	Trade -rs	120	4.01	1.15	- 1.6 2	541	1.9 6	Accepte -d
2.	There is no significant difference between the opinions of the market masters and other traders in Wuse Market, Abuja FCT.	Trade -rs	120	3.89	1.01	- 1.6 2	541	1.9 6	Accepte -d

**Significant level = 0.05**

##### 4.2.1 Hypothesis One (Ho1):

Hypothesis (Ho1) tes that there is significant difference between the opinions of male and female respondents in Wuse Market Abuja FCT with regards to entrepreneurial development and job creation in Wuse Market Abuja FCT. The hypothesis was tested at 0.05 alpha level of significance. Frol the table 4.2 above, the calculated t-values, (-1.62) is less than the t-calculated (1.96). Hypothesis (Ho1) is therefore accepted.

##### 4.2.2 Hypothesis Two (Ho2):

Hypothesis (Ho2) states that there is no significant difference between the opinions of the market masters and other traders in Wuse Market, Abuja FCT Nigeria with regard to entrepreneurial development and job creation

in Wuse Market, Abuja FCT. This was tested at 0.05 alpha level of significance. From table 4.2 above, the calculated t-value (-1.62) is less than the t-tabulated (1.96). Hypothesis (Ho2) is therefore accepted.

Respondents therefore accepted in all clusters, there is no significant difference between the opinions of male and female respondents and the market masters and other traders as regards entrepreneurial development and job creation in Wuse Market, Abuja FCT.

### **4.3 Summary of Major Findings**

This study seeks to find out the significant effect of Entrepreneurial Development on Job Creation in Wuse Market Abuja FCT, to confirm whether entrepreneurial development activities have effect on the lives of the traders in Wuse Market Abuja FCT and to investigate the challenges and problems confronting entrepreneurial development in the process of executing its plans and programs in Wuse Market Abuja FCT.

Unemployment has been identified as one of the major problems confronting our nation menace, especially the youth population. In order to ameliorate this menace, a number of policies and programs were put in place by both the federal and the Federal Capital Territory (FCT) Abuja in Nigeria. Part of the policies and programs of government then was to be deeply involved in Entrepreneurial development training programs as a means to tackle the high rate of unemployment.

One of the ways to assess a policy or program is to get feedback information from the supposed beneficiary or the general public to ascertain the extent of impact on the targeted beneficiaries. Hence, this study is a way to ascertain the effect of entrepreneurial development on job creation in Wuse Market Abuja FCT.

The revelation from this study shows that there is tremendous positive effect of entrepreneurial development programs and activities on job creation through the provision of opportunities for the unemployed in Abuja FCT with the mind of making them become self-employed thereby generating earnings via the works of their hands. However, we find out that number of those into entrepreneurial development programs cannot be compared with the numbers that are unemployed. This implies that entrepreneurial development effort has not been enough to make less the severity of the unemployment problem confronting the Abuja FCT. As such, this demand a policy design that will ensure consistency in the operation of Entrepreneurial development to provide more opportunity for as many young persons that are interested in the entrepreneurial programs.

### **4.4 Discussion of Results**

Though unemployment has become a global phenomenon of the 21<sup>st</sup> century, in Nigeria the problem is becoming more gargantuan each passing year. Unemployment, underemployment and unmitigated rural-urban migration have come to characterize the Nigerian labor market. This has been compounded by frightening number of joiners as schools, polytechnics and universities churn out leavers in a geometric progression. This

position was adumbrated and concurred with by Ifionu and Akinpelumi (2017) who carried out research on the of entrepreneurial financing on output (employment) generation in Nigeria while using secondary data over the period of 1992 to 2014. The analysis of data showed that in the long and short run situations entrepreneurial development enhances job creation and high-income levels in Nigeria. This assertion was also supported by Agu et al. (2015) who conducted empirical research on entrepreneurship challenges and opportunities in Nigeria and examined entrepreneurship as the process of creating, something new of value with devoted time and effort alongside financial and social risks resulting in monetary reward and in return personal independence and satisfaction (as cited in Duru, 2011). Analytical tool adopted for this study is a descriptive method which focuses on drawing inferences from the various theories of entrepreneurship. The study identified three criteria that can enhance entrepreneurship.

They are vision creation, leveraging on strengths and identification of market needs. Chuka et al. (2015) as cited in Duru (2011), opined that entrepreneurship is important for sustainable economic development and growth. He established that it generated labor and skill needed for growth, reduce unemployment and poverty.

He stated that the government need to develop an investor-friendly environment, address dilapidated infrastructural amenities (e.g. electricity, railways, roads etc.). He also states that the educational sector needs to be rebuilt with an emphasis on science and technology. Emphasis was laid on changing the mind set of young people to encourage the idea of self-employment entrepreneurship) instead of waiting for government jobs. Finally, he mentioned the need to give support financially to individuals with innovative ideas so that such ideas can be translated into reality.

## **5.0 Introduction**

This research study is on the assessment of the impact of entrepreneurial development on job creation (a case study of Wuse Market, Abuja FCT Nigeria. The main objective of this study is to investigate the impact of entrepreneurial development programs on job creation. The study also seeks to examine the impact of entrepreneurial development programs on the lives of the unemployed through job creation, and to find out if there are challenges and problems encountered in the execution of entrepreneurial development programs and activities in Wuse Market Abuja FCT, Nigeria.

### **5.1 Implications of the Research Findings**

The findings of the study have some important entrepreneurial implications. The implication of the findings as they relate to the impact of entrepreneurial development on job creation in Wuse Market Abuja are hereby highlighted. In the first instance, unemployment has become a global phenomenon of the 21<sup>st</sup> century. In Nigeria, the problem is becoming more gargantuan each passing year. Unemployment, underemployment and

unmitigated rural-urban migration have come to characterize the Nigerian labor market. This has been compounded by frightening number of joiners as schools, polytechnics and universities churn out leavers on a geometric progression. As a curative measure, the entrepreneurial development programs were designed to proffer solution to this unemployment problem for youth empowerment.

With regard to our study area (Wuse Market Abuja FCT), findings showed that entrepreneurial development programs in generating jobs and employment opportunities for youth empowerment are yielding progressively. That is, entrepreneurial development programs have been playing significant role in employment operation in Wuse Market Abuja FCT and have impacted on the lives of the unemployed through entrepreneurial skill development in Wuse Market, Abuja FCT especially for the teeming population of her unemployed youths. We also found that to a large and high extent entrepreneurial development programs have created jobs for unemployed youths in Wuse Market Abuja FCT. In this regard, a very good number of these youths have taken to such trade like cash trading, business, fashion designing, furniture/carpentry, pure water industries etc.

In addition, the study revealed that there has been efficiency in the running of the activities of the entrepreneurial centers across Abuja FCT. Furthermore, the study reveals that entrepreneurial development programs can truly become a boon to curb the high rate of unemployment in the Nigerian system but not without some obvious challenges and problems that were often encountered in the course of the execution of entrepreneurial development programs and activities in Wuse Market Abuja FCT.

## 5.2 Conclusion

The study looked at the impact of entrepreneurial development on job creation in Wuse Market Abuja FCT Nigeria. The outcome of the study reflected that there are evidences of the impact of entrepreneurial development in Wuse Market Abuja. This is not without some accompanying challenges given the massiveness of the numbers of the numbers of the unemployed in the Abuja FCT. In a way, the impact of these entrepreneurial development programs and initiatives are not being felt as much as desired because of the magnitude of the numbers of young and unemployed persons that crave for it. Whereas it has been a herculean task for the government in meeting the yearning of this set of people given the meagre resources available to the Abuja FCT and those dedicated to the entrepreneurial development programs.

## 5.3 Recommendations Based on Research Findings

Based on the research findings of this study, the following recommendations were proffered:

- i. Entrepreneurial development initiatives plays significant role in job creation, bearing in mind that large population of the unemployed in the Abuja FCT, the government should endeavor to increase the number of



entrepreneurial development based training centers in the Abuja FCT so as to capture a reasonable number of unemployed youths.

ii. No doubt, this will require massive funding, it is in this light that the study recommends a policy framework that will project collaboration with Micro-finance banks for funding of entrepreneurial development projects, training and programs. Besides, Micro-finance banks can also be encouraged to set up entrepreneurial training institutes through a synergy with the Federal government which should include assurance of patronage by government and those to be trained.

ii. From the study, it was found out that one of the problems/challenges militating against Entrepreneurial development is the inaccuracy of the statistics of the unemployed in Abuja FCT that has in a way inhibited plans and programs aimed at employment generation through entrepreneurial development in Abuja FCT. In this regard, it is recommended that accurate statistics of the unemployed should be ascertained to allow for the design of a steady entrepreneurial development program to tackle the need of the unemployed. This will pave the way for the urgency of the need to concentrate and give due attention to creative and skill-based learning that generates entrepreneurial skills rather than certificate without the job skills required to fit into the working system.

iii. An understanding of what it takes to engage the youth population meaningfully must be undertaken to facilitate the process of training them into entrepreneurs and at the same time make them self-employed individuals. In this regard, constant reorientation of the mind of these young fellows is crucial so as to prevent them from becoming instrument of violence, thuggery, crime, and other forms of social ills, just as the saying goes that ‘‘an idle man is a devil’s workshop’’.

iv. Government must ensure necessary modifications in the educational system in the country that would make graduates to be employers of labor and self-employed, instead of looking for unexisting job opportunities. The acquisition of the right skills to fit the various needs of the society is imperative.

#### **5.4 Suggestion for Further Studies**

This study is focused on the assessment of the impact of entrepreneurial development on job creation in Wuse Market, Abuja Nigeria. The study has been able to bring to the fore the significance of entrepreneurial development and initiatives towards job creation. Given the gigantic nature of the unemployment problem in Nigeria; it is expedient that more research efforts be put in place so as to arrest the menace of unemployment in Nigeria

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## THE ISLAMIC PERSPECTIVE ON END-OF-LIFE DECISIONS

**Associate Professor Dr. Naseem Akhter**

**Department of Islamic Studies**

**Shaheed Benazir Bhutto Women University, Peshawar, Pakistan**

**[khtr\\_nsm@yahoo.com](mailto:khtr_nsm@yahoo.com)**

### **Abstract**

Islamic teachings emphasize life and death, regulating them by Allah Almighty. End-of-life decisions, such as withdrawing life support and prolonging life through aggressive treatment, raise ethical issues between modern medical ethics and Islamic Sharia. The study reviews the principles based on the Islamic perspective, emphasizing the importance of preserving human life, minimizing suffering, and accepting death with dignity. It concludes that Islamic teachings provide a balanced guide for these sensitive decisions, balancing respect for life with acceptance of death as a natural process.

**Keywords:** Life and death, Islamic perspective, Patient, Family, Physician

**ISLAMIC SCIENTIFIC PARADIGM****Fikri Novrial AZHAR**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID : <https://orcid.org/0009-0000-3093-1445>**Muhammad Farhan AHNAF**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID : <https://orcid.org/0009-0008-8569-3489>**Elda PURWANTI**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0001-8042-8589>**Hendri Hermawan ADİNUGRAHA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0003-5488-8252>**Abstract**

This research intends to explain about Islamic scientific paradigm. The Islamic perspective on science based on the source of the Qur'an which is believed to be true. Recently there has been a dichotomy between religious science and general science. Religious science talks about the relationship between humans and God and the relationship between humans and humans, while general science talks a lot about the universe. The relationship between religious knowledge and general science is a topic that is still relevant to study. Because there are still many people who think that religious knowledge and general knowledge conflict with each other. In fact, this relationship can be harmonized by changing the paradigm that religious knowledge is not only a matter of humans and their God or humans and each other but for all aspects of human life. The research method uses a type of qualitative research with a library research approach. This study concludes that the Islamic scientific paradigm is a study that is closely related to the point of view in understanding the problems that occur. The emergence of a paradigm is the result of scientific research carried out in depth until finally something new is discovered and a new paradigm emerges regarding that matter.

**Keywords:** paradigm, science, and knowledge.

**TRADITIONAL POLITICAL SYSTEM AND DEVELOPMENT OF DEMOCRACY IN NIGERIA****Salako, Oluwaseun Adewale<sup>1</sup> & Ajibade, Olalekan Eyitayo<sup>2</sup>****Department of General Studies****The Federal Polytechnic, Ilaro****Ogun State, Nigeria**<sup>1</sup> **oluwaseun.salako@federalpolyilaro.edu.ng**<sup>2</sup> **olalekan.ajibade@federalpolyilaro.edu.ng****Abstract**

This study examined the traditional political system and development of democracy in Nigeria. The objectives were to examine the effectiveness of the traditional political system in the modern day Nigeria, assess the role of traditional political system before and after Nigeria independence. The study was qualitative and exploratory in approach. Therefore, data were gathered using the secondary method of data collection. The study employed descriptive and interpretive methods of analysing data gathered. The study revealed that the traditional political system has proven resilient, evolving from a system of local governance before and during colonial times to a more ceremonial role post-independence. Also, it revealed that the Nigerian constitution allows for traditional institutions, as it limits their political authority to mostly advisory roles. Thus, the study concluded that traditional rulers serve as cultural custodians, conflict mediator, and community advocates, roles that are valued by many citizens. Although, their limited power, lack of formal accountability, and sometimes unclear jurisdictional authority reduce their overall effectiveness within governance. Therefore, it was recommended that the constitution should be amended to clarify the advisory and cultural roles of traditional rulers, establishing a formalized structure for their involvement in local governance. Also, collaboration between traditional institutions and local governments should be strengthened so as to improve service delivery and governance in rural communities.

**Keywords:** Conflict Mediator, Local Governance, Service Delivery, Traditional Institutions

## THE VALIDITY OF THE SALE AND PURCHASE AGREEMENT WITH SHOPEE PAYLATER AS FINANCIAL TECHNOLOGY IN ISLAMIC LAW

**Fira AULIA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0008-3974-8426>

**Hendri Hermawan ADINUGRAHA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0003-5488-8252>

### Abstract

The Shopee Paylater feature on the Shopee application is a buy now pay later or installment/credit payment system. This research was conducted with the aim of examining the validity of buying and selling contracts with Shopee PayLater as financial technology in Islamic law. This research uses a normative legal research method with a statutory approach (Statute Approach) and uses primary legal materials, secondary legal materials and tertiary legal materials. This research is included in descriptive research. The research results show that according to DSN-MUI fatwa no. 116/DSN-MUI/IX/2017 concerning sharia electronic money, it can be clearly seen that Shopee Paylater does not meet the criteria set by the DSN-MUI fatwa because it contains elements of ribawi with a minimum interest of 2.95% per month and has a handling fee of 1% of total transactions as well as arrears/late fees worth 5% of total transactions each month. This is of course burdensome and detrimental to buyers.

**Keywords:** PayLater, Financial Technology, Islamic Law



## A RESEARCH REVIEW ORGAN DONATION AND TRANSPLANTATION FROM AN ISLAMIC PERSPECTIVE

Associate Professor Dr. Naseem Akhter

Department of Islamic Studies

Shaheed Benazir Bhutto Women University, Peshawar, Pakistan

[khtr\\_nsm@yahoo.com](mailto:khtr_nsm@yahoo.com)

### Abstract

Islamic teachings serve as the basic guidance for the well-being and benefit of human beings. Organ donation and transplantation is one of the important issues concerning medical, ethical, and religious aspects. This research review explores the circumstances under which organ donation and transplantation are allowed under Islamic law and the views of scholars.

It has been revealed during the study that in the Quran and Sunnah, protection and respect for human life are some of the main principles; thus, it would be a noble act of donation if it is to save or enhance the life of an individual in need. However, it has also been noted that it is subject to the consent of the donor, ethical standards, and not selling or buying through illegal means.

There is also disagreement between scholars, especially regarding organ donation after death, which is permissible according to some schools of thought, while others have regarded it as conditionally permissible. Besides, it has also been investigated to what extent social and legal challenges can be posed through organ transplantation and what solutions are available in Islam.

This research review concludes that organ donation and transplantation are permissible and encouraged practices under Islamic principles, provided they are carried out under human dignity, Sharia rules, and medical regulations. In this regard, the need for public awareness, fatwas, and further promotion of Islamic teachings has also been emphasized.

**Keywords:** The Quran and Sunnah, Humanity, Organ donation





## A RESEARCH REVIEW OF PUBLIC HEALTH ETHICS UNDER ISLAMIC CONTEXT

Associate Professor Dr. Naseem Akhter

Department of Islamic Studies

Shaheed Benazir Bhutto Women University, Peshawar, Pakistan

[khtr\\_nsm@yahoo.com](mailto:khtr_nsm@yahoo.com)

### Abstract

Muslims have guidelines that they should follow in every human endeavor, and public health ethics is not exempted. This research review addresses which of the ethical principles should be applied in public health in light of Islamic injunctions.

The Quran and Hadith have promoted the protection of life, avoiding diseases, and promoting the well-being of the Population. Thus, in the Islamic perspective, health is a blessing from Allah, which therefore must be protected by everyone. The study highlights that the four principles of transparency, justice, and respect for human dignity have to be respected in the public health system.

For issues like epidemics, vaccination policies, and distribution of health care, it is mandatory to pay heed to ethical principles of Islamic ethics of justice, beneficence, and compromise for the common good. Besides, this paper has also interfered with the Islamic view which also supports the rights of people as well as the community in order to ensure that adequate public health facilities are developed.

This research work concludes that the teachings of Islam offer a relievable packaged and coherent resolution to the question of the development of an ethical framework in public health. This is very sensitive and shows the need for health efforts, Islamic practices, and ethical standards. In addition, the study underlines the latter at the educational as well as social levels toward enhancing people's awareness and encouragement of Islamic ethics.

**Keywords:** Muslims, Epidemics, Vaccination, Health care



## A RESEARCH REVIEW OF THE END OF LIFE DECISIONS FROM AN ISLAMIC PERSPECTIVE

Associate Professor Dr. Naseem Akhter

Department of Islamic Studies

Shaheed Benazir Bhutto Women University, Peshawar, Pakistan

[khtr\\_nsm@yahoo.com](mailto:khtr_nsm@yahoo.com)

### Abstract

Islamic teachings pay special attention to all matters pertaining to life and death, which are expressly regulated by Allah Almighty. Apart from other highly emotive and difficult end-of-life decisions such as withdrawing from life support and prolonging life through aggressive treatment, it also raises an ethical issue between modern medical ethics and Islamic Sharia concerning these end-of-life decisions.

This study review examines the principles upon which end-of-life decisions are based from an Islamic perspective. It stresses the importance of preserving human life as derived from the Quran and Sunnah, besides minimizing unnecessary suffering and acceptance of death with dignity and respect.

Shares highly heterogeneous opinions regarding the theoretical scenarios; considering the Islamic theological stance, many scholars would dissuade; unnecessary medical interventions that would prolong the natural process of dying. Decisions related to withdrawing life support and withholding treatment must is not outside the purview of Sharia.

Elements such as consultation with the patient, the family, and the physician, the framing of the process with the right intention, and adherence to ethical principles are major players in the Islamic perspective on end-of-life decisions.

The research concludes that Islamic teachings offer a balanced guide to these sensitive end-of-life decisions, where a balance is struck between respect for life and acceptance of death as a natural process. Public awareness, guidance from medical professionals, and fatwas from learned scholars could provide further clarification and guidance on this topic.

**Keywords:** Life and death, Islamic perspective, Patient, Family, Physician

## **EXCESSIVE CREDIT CARD USAGE: A GROWING PROBLEM**

**Rishika D Bagrecha, B.Com.**

**CA Finalist, Bangalore**

**and**

**Dr. Chaya Bagrecha,**

**Professor, Finance, CMS Business School, Faculty of Management Studies, Jain (deemed-to-be University), Bangalore**

### **Abstract:**

A credit card is a payment card that enables the cardholder to borrow funds from a pre-approved limit to make transactions. It functions as a short-term loan, often subject to interest if not repaid within a set timeframe. While credit cards offer many benefits, their overuse is becoming an increasing concern. The temptation of "buy now, pay later" can lead to reckless spending, and if not managed properly, it can spiral into debt. Overusing credit cards can have a direct negative impact on your credit score. Living with credit card debt can cause significant emotional stress. Credit card companies may charge fees that can catch people off guard, particularly those who don't read the fine print. Overuse can also increase the risk of fraud. The more a person relies on credit cards, the more they may struggle to establish financial stability. Establishing a budget can help prevent overspending and keep credit card use within reasonable limits. Avoiding interest charges by paying off balances in full each month is one of the best ways to keep credit card usage manageable. Regularly checking credit card statements helps spot errors or fraudulent charges early. If using credit cards for rewards, ensure that these benefits align with your budget and spending habits. It's essential to use them responsibly, staying mindful of both the short-term benefits and the long-term financial impact.

**Keywords:** Credit cards, debt, financial stability, benefits and risks

## DOLLAR SURGE TO RP16,500: THREAT TO INDONESIA'S ECONOMIC STABILITY

**Muhammad Ilham FAHMI**

**State Islamic University of Pekalongan, Indonesia**

**ORCID ID: <https://orcid.org/0009-0001-3055-8772>**

### ABSTRACT

The depreciation of the Indonesian rupiah against the US dollar has significant repercussions, particularly for manufacturing sectors reliant on imports. Rising costs of imported materials, along with weakened consumer purchasing power, deepen economic challenges. Businesses with foreign currency loans face increasing debt servicing costs, leading to a rise in non-performing loans and financial instability. Furthermore, the depreciation contributes to inflationary pressures, reducing domestic demand and increasing unemployment. To mitigate these impacts, Indonesia needs a combination of short-term currency stabilization measures and long-term strategies aimed at reducing dependence on imports and strengthening local industries.

Keywords: Dollar, Rupiah, Businesses

### INTRODUCTION

The exchange rate between the rupiah and the US dollar has long been a barometer for Indonesia's economic health. In recent months, the rupiah has depreciated significantly, raising concerns about the impact on various industries. For countries like Indonesia, which rely heavily on imported raw materials, energy, and consumer goods, a weaker rupiah means higher costs for these imports. In addition, weaker purchasing power among consumers further deepens the economic strain. While the immediate effects are most apparent in the manufacturing and export sectors, the broader economy is also feeling the pinch, particularly in terms of inflation, unemployment, and economic instability.

### METHOD

This study utilizes a qualitative approach, examining current exchange rate data and economic forecasts. Insights are drawn from the analysis of market trends, expert opinions, and the financial performance of industries facing the pressure of foreign debt. The research also considers global economic factors, such as US monetary policy and geopolitical tensions, to understand their influence on currency exchange rates and economic conditions in Indonesia.

## RESULTS AND DISCUSSION

The weakening of the Indonesian rupiah, driven by the rise in the US dollar, has created significant challenges for various sectors, especially manufacturing. The increased costs of imported raw materials and reduced consumer demand have strained businesses, particularly those with foreign currency loans. As the US dollar strengthens, the servicing of these loans becomes more expensive, leading to higher debt burdens. This financial pressure is reflected in rising non-performing loans and decreased debt repayment capacity, potentially leading to widespread business closures.

The ripple effect of these challenges is seen in rising unemployment, especially within the manufacturing sector, as companies cut costs through layoffs. This, in turn, affects household incomes and increases social instability. According to market expert Ariston Tjendra, several factors, including the strengthening US dollar, the US economy's performance, and geopolitical tensions, have led to a rise in the value of the dollar. These external factors continue to exacerbate the pressures on the rupiah.

On the domestic front, the Indonesian government's economic policies, including low interest rates to stimulate growth, have further strained the currency. Bank Indonesia (BI) attributes the depreciation to global uncertainties and the potential for a more protectionist US trade policy under former President Donald Trump. These external pressures, along with internal economic challenges, have created a volatile environment, impacting both business and consumer confidence.

The implications of these developments are multifaceted. The manufacturing sector, which relies heavily on imports, faces increasing production costs. This could lead to inflation, further reducing consumer purchasing power. Additionally, rising unemployment from industrial slowdowns could cause a significant social impact, including an increase in poverty rates.

In conclusion, while the rupiah's depreciation is driven by complex global and domestic factors, its consequences are clear: higher costs, reduced consumer demand, increased debt burdens, and rising unemployment. Addressing these challenges requires a coordinated policy response that stabilizes the currency, supports local industries, and ensures social safety nets for those affected.

## CONCLUSION

The weakening of the rupiah and the rising US dollar present significant challenges for Indonesia's economy, particularly for manufacturing industries that depend on imports. Rising production costs, inflation, and the burden of foreign currency debt are creating a vicious cycle of economic stress, reduced consumer demand, and rising unemployment. To mitigate these effects, Indonesia must implement both short-term measures to stabilize

the currency and long-term strategies to promote economic resilience. Only through these combined efforts can Indonesia hope to weather the storm and return to a path of sustainable economic growth.

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## INTRODUCTION TO SHARIA SAVING FOR GENERATION Z AND ALPHA

**Fatima Dina RAHMADAYANTI**

**Faculty of Economics and Business, UIN K.H. Abdurrahman Wahid Pekalongan**

**ORCID ID: <https://orcid.org/0009-0000-1097-2442>**

### **Abstract**

This research discusses the introduction of Islamic savings to generation Z and Alpha with a maximum balance limit of Rp20 million. Various banks in Indonesia offer attractive Islamic savings products, such as Simpanan Pelajar Islamic Banking (SimPel iB). This savings account is designed for students from early childhood to high school, with easy and simple requirements. SimPel iB offers several excellent features, including Wadi'ah or Mudharabah contracts, no administration fees, a low initial deposit, and a low minimum balance. This savings account aims to introduce financial services to students and encourage early saving habits. In addition, SimPel iB also provides benefits in the form of financial education, fund security guaranteed by LPS, and easy access to financial services. This product is expected to help students manage their finances effectively and prepare for a better future.

**Keywords: high school, financial, islamic**





## ORGAN DONATION AND TRANSPLANTATION IN ISLAM: A REVIEW

**Associate Professor Dr. Naseem Akhter**

**Department of Islamic Studies**

**Shaheed Benazir Bhutto Women University, Peshawar, Pakistan**

**[khtr\\_nsm@yahoo.com](mailto:khtr_nsm@yahoo.com)**

### **Abstract**

This research work explores the principles of Islamic teachings, particularly organ donation and transplantation, and their permissible conditions under Sharia law. It emphasizes the importance of protecting and respecting human life, as per the Quran and Sunnah. The study also addresses potential social and legal issues related to organ transplantation. Despite these challenges, the paper concludes that organ donation and transplantation are acceptable and recommended activities under Islamic principles, highlighting the need for fatwas, public education, and the dissemination of Islamic tenets.

**Keywords:** The Quran and Sunnah, Humanity, Organ donation





## ETHICAL PRINCIPLES AND THE DEVELOPMENT OF PUBLIC HEALTH FACILITIES IN THE LIGHT OF ISLAMIC INJUNCTIONS

Associate Professor Dr. Naseem Akhter

Department of Islamic Studies

Shaheed Benazir Bhutto Women University, Peshawar, Pakistan

[khtr\\_nsm@yahoo.com](mailto:khtr_nsm@yahoo.com)

### Abstract

This research work discusses the ethical principles in public health based on Islamic injunctions. The Quran and Hadith emphasize the protection of life, disease prevention, and population well-being. The study emphasizes the importance of transparency, justice, and respect for human dignity in the public health system. It also emphasizes the need for justice, beneficence, and compromise in issues like epidemics, vaccination policies, and healthcare distribution. The study emphasizes the need for Islamic practices and ethical standards at educational and social levels.

**Keywords:** Muslims, Epidemics, Vaccination, Health care



## THE EVOLUTION OF THE CONCEPT OF CORPORATE SOCIAL RESPONSIBILITY

**Victoria POSTOLACHE, PhD., associate professor**

**ORCID: 0000-0003-4023-9705**

**e-mail: vic.postolache@yahoo.com**

**Alecu Russo Balti State University, Faculty for Exact, Economic and Natural Science,  
Department of economic sciences, Balti, Republic of Moldova**

**Natalia BRANAȘCO, PhD., associate professor**

**ORCID: 0000-0002-7913-2131**

**e-mail: natali\_bran@yahoo.com**

**Alecu Russo Balti State University, Faculty for Exact, Economic and Natural Science,  
Department of economic sciences, Balti, Republic of Moldova**

### **Abstract**

The analysis of the evolution of the concept of corporate social responsibility (CSR) must be preceded by an understanding of its essence, which involves gradual changes, adaptation to new conditions of existence, and development. **The purpose of the research** is to analyze the evolution of the concept of corporate social responsibility (CSR), with a focus on its historical transformations and adaptation to new economic, social, and cultural conditions. The research aims to highlight how CSR has shifted from a philanthropic approach to an integrated sustainability strategy, as well as to identify its impact on the community, environment, and economy in the context of the contemporary global economy. Additionally, it emphasizes the importance of corporate responsibility as an essential component of organizational success and the well-being of future generations.

Corporate social responsibility (CSR) is a dynamic concept that has evolved alongside the social, economic, and cultural transformations of society. From past philanthropic approaches focused on donations and charitable acts, CSR has transformed into an integrated strategy aimed at long-term sustainability and a positive impact on the community, environment, and economy.

In the context of today's global economy, the concept of CSR is no longer perceived merely as an ethical obligation of companies but as an essential part of their business model. This shift reflects the recognition that corporate success is closely tied to the well-being of stakeholders and the responsibility towards future generations.

**Key words:** corporate social responsibility, sustainability, economic development, community impact, Organizational success

## EDUCATION AS A CATALYST: ANALYZING ITS IMPACT ON ECONOMIC GROWTH AND DEVELOPMENT

**Victoria POSTOLACHE, PhD., associate professor**

**ORCID: 0000-0003-4023-9705**

**e-mail: vic.postolache@yahoo.com**

**Alecu Russo Balti State University, Faculty for Exact, Economic and Natural Science,  
Department of economic sciences, Balti, Republic of Moldova**

**Natalia OSELSCHI, student at Finance and Banking**

**e-mail: nataliajmurciuk@gmail.com**

**Alecu Russo Balti State University, Balti, Republic of Moldova**

### **Abstract**

The systemic principle of the new world order in the 21st century is the principle of development based on knowledge for and through humans. This principle is universal for all systemic levels, even the lowest ones.

Since the production of knowledge is an exclusively human function, the elevation of the human role in the concept of societal development has become objectively necessary. Beginning in the second half of the 20th century, interest in the role of human capital in the economy increased due to objective reasons: developed countries transitioned to a new stage of socio-economic development, in which human capital acquired a qualitatively new significance. In the context of a post-industrial economy, a knowledge-based economy, the shift in the structure of national wealth toward an increased share of intangible elements (scientific achievements, the population's educational level, and the quality of healthcare) has become paramount for ensuring sustainable development.

The increasing and dynamically changing demands on humans in the modern knowledge-based economy necessitate a significant rise in "capital" investments in the development of professional skills, competencies, and personal potential as part of the cost structure for human reproduction. These aspects of human reproduction are largely facilitated through the education system.

**Key words:** human capital, knowledge-based economy, sustainable development, education system, socio-economic development

## A QUALITATIVE ASESSMENT OF AI'S IMPACT ON TRANSLATORS' WORKS

**Valentina Marinescu**

**ORCID: <https://orcid.org/0000-0002-9882-5902>**

**E-Posta: [valentina.marinescu@unibuc.ro](mailto:valentina.marinescu@unibuc.ro)**

**Faculty of Sociology and Social Work, University of Bucharest, Romania**

**Ramona Marinache**

**ORCID: <https://orcid.org/0000-0002-4072-8253>**

**E-Posta: [ramona.marinache@unibuc.ro](mailto:ramona.marinache@unibuc.ro)**

**Faculty of Letters, University of Bucharest, Romania**

### **Özet**

Our research started from two assumptions: the more experienced translators, that started their work using pen, paper and typewriting machine, primarily use technology for text proofreading and editing, while translators with less experience rely more on AI advancements and software for their translations. This presentation is focused on the use of technology by translators by emphasizing the approaches to technology in translators' work and the perspective of translators on using technology for translation. We conducted a qualitative study collecting data with the help of interviews with 15 translators. The interviews were conducted online. The data that is going to be presented is based on a qualitative research made in Romania by interviewing 15 translators ensuring confidentiality and minimizing bias. Thematic analysis was used to interpret the data and provide insights into translators' attitudes towards technology, contributing to more effective translation practices in the digital age.

**Anahtar Kelimeler:** Age gap in digital age, translating, usage of software, Artificial Intelligence, qualitative approach.

## THE FASHION DURING THE COVID19 PANDEMICS

**Ramona Marinache**

**ORCID: <https://orcid.org/0000-0002-4072-8253>**

**E-Posta: [ramona.marinache@unibuc.ro](mailto:ramona.marinache@unibuc.ro)**

**Faculty of Letters, University of Bucharest, Romania**

**Valentina Marinescu**

**ORCID: <https://orcid.org/0000-0002-9882-5902>**

**E-Posta: [valentina.marinescu@unibuc.ro](mailto:valentina.marinescu@unibuc.ro)**

**Faculty of Sociology and Social Work, University of Bucharest, Romania**

### Özet

In May 2020, the Romanian Ministry of Health (MH) and Ministry of Internal Affairs (MIA) decided that one of the preventive measures regarding the transmission of COVID19 should be the obligation to wear a protective mask in closed public spaces, commercial spaces and at work (MIA, 2020). In a short time, the mask became mandatory in open and closed spaces in Romania, this obligation ending only on March 8, 2022 (MAI, 2022). Thus, face mask has become a part of everyday life, acquiring an independent life, which was highlighted by the way in which the online media presented the issue of masks in the last two years. Beyond the aspects related to medical prevention, the mask has become a part of everyday fashion in the years 2020-2022. Based on mask photos found on social network sites and on online media, and on Choi's (2013) analysis of fashionable uses of facemasks, our study focused on face masks used as fashion items. The main result showed that during the COVID 19 pandemics a new technological and fashionable mask production/consumption emerged, which we placed into six categories: advertising, political, activism, look, playful and futuristic.

**Anahtar Kelimeler:** COVID19 pandemics, fashion, health, maskks, mass consumption

## INVESTIGATING THE SYSTEMATIC RISK IN AIRLINE INDUSTRY

Professor Dr. Laura Diaconu (Maxim)

ORCID: <https://orcid.org/0000-0001-5745-3850>

E-mail: lauradiaconu\_07@yahoo.com

Faculty of Economics and Business Administration,  
“Alexandru Ioan Cuza” University of Iasi, Romania

### Abstract

The airline industry is a key sector in global transportation, characterized by high operational costs, fluctuating demand and exposure to a range of macroeconomic and geopolitical risks. During the last three decades, the world airline industry has been exposed to various external shocks. The economic turbulences generated by the outbreak of the 1997 Asian Financial crisis were followed by the September 11 incident, the bursting of dot-com bubbles in the early 2000s, the outbreak of SARS pandemic, the 2008 global economic-financial crisis, the COVID-19 pandemic and the security crisis that started with the Ukraine-Russian war. Therefore, the purpose of this study is to investigate, the systematic risk within the airline industry, aiming to understand the factors that contribute to its vulnerability to market-wide fluctuations. By using a combination of financial data analysis and econometric modeling, the paper evaluates how external variables such as fuel prices, regulatory changes, economic cycles and geopolitical events affect the financial performance and risk profiles of major airlines.

**Key words:** systematic risk, financial vulnerabilities, airline industry



## FINANCIAL INCLUSION IN EMERGING ECONOMIES. EMPIRICAL INVESTIGATION

**Professor Dr. Laura Diaconu (Maxim)**

**ORCID:** <https://orcid.org/0000-0001-5745-3850>

**E-mail:** [lauradiaconu\\_07@yahoo.com](mailto:lauradiaconu_07@yahoo.com)

**Faculty of Economics and Business Administration,  
“Alexandru Ioan Cuza” University of Iasi, Romania**

**Prof. Habil. Mihai-Bogdan PETRISOR, PhD.**

**ORCID:** 0000-0002-5821-3004

**Email:** [mihai.petrisor@uaic.ro](mailto:mihai.petrisor@uaic.ro)

**Faculty of Economics and Business Administration,  
“Alexandru Ioan Cuza” University of Iasi, Romania**

### **Abstract**

During the last years, many emerging markets have adopted policies focusing on financial inclusion in recent years. These policies have attracted great attention from both scholars and policy makers since financial inclusion is considered to have positive effect on economic growth. Yet, the existing literature on emerging economies is still limited. Therefore, this paper aims to provide a more comprehensive insight about the role of financial inclusion on economic growth and poverty reduction in emerging markets. By using a comprehensive empirical approach, the research examines the key determinants of the financial inclusion, such as access to banking services, digital financial technologies, regulatory frameworks and financial literacy. Our findings suggest that while advancements in digital banking and mobile money services have significantly improved financial inclusion in several regions, challenges remain, particularly in rural and underserved areas. The impact of our study results from the fact that it highlights the importance of effective government policies, financial education and innovative financial products in overcoming the barriers to access the financial services.

**Key words:** financial inclusion, emerging markets, economic growth

## SOCIAL MEDIA ADVERTISING AND THE DILEMMA OF EXCESSIVE CONSUMPTION IN ALGERIA: ANALYSIS OF CONSUMER PERCEPTION

Sara ZELLEĞ

ORCID: 0000-0003-2270-6648

E-mail: sara.zelleg@univ-bejaia.dz

A-Mira University of Bejaia, SEGC Faculty, Department of Commercial Sciences, Bejaia, Algeria

### Abstract

In the Algerian context, companies and other brands use advertisements through social networks, but this raises a fundamental question: do they promote responsible consumption or encourage excessive consumption? The starting point of this study is the analysis of the Algerian consumer's perception of digital advertising messages, which aim to attract their attention and encourage them to buy, as well as the social responsibilities of companies that arise from it.

This sample consists of 100 Algerian consumers covering various age groups and social strata, who were interviewed through structured questionnaires. The age groups of the consumers are as follows:

- handling advertising messages: Do the Algerian consumers encourage those advertisements as responsible or simply consider them as adding in over consumption?
- Behavior of Buyers: Do customers get such advertisements stitching the feeling of need and haste or making them to think what is important for them?
- Expectations about ethics and sustainability: What are the expectations of the advertising campaigns of Algerian consumers?

The findings bring to the fore an interesting contradiction. Although, most consumers (70%) hope that the advertising messages are directed to stress on eco-sustainability and social responsibility aspects, more than half of the consumers (62%) think that the marketing advertisements done in Algeria promotes overconsumption by more marketing techniques like discounts and emotional adverts.

On the analysis's demographic variables show also that there are modifications. Youngish Algerians are more responsive to moral OR ethical issues but this position is not the same with other cohorts who seem to be somewhat more circumspect.

This research highlights the need, for the companies working in Algeria, to develop ad campaigns which would serve commercial goals alongside the growing consumers' demand for ethics and social responsibility.

**Key words: Social Media Advertising; Excessive Consumption; Consumer Perception; Sustainability**

## MEDIA LITERCY IN THE AGE OF SOCIAL MEDIA

**Ramona Marinache**

**ORCID: <https://orcid.org/0000-0002-4072-8253>**

**E-Posta: [ramona.marinache@unibuc.ro](mailto:ramona.marinache@unibuc.ro)**

**Faculty of Letters, University of Bucharest, Romania**

**Valentina Marinescu**

**ORCID: <https://orcid.org/0000-0002-9882-5902>**

**E-Posta: [valentina.marinescu@unibuc.ro](mailto:valentina.marinescu@unibuc.ro)**

**Faculty of Sociology and Social Work, University of Bucharest, Romania**

### Özet

Scientists make their work available by writing scientific books, articles, essays, blogs, and, for the past decade, audio and video podcasts. Usually these scientific productions are available to the public, but can be understood only by other trained scientist in the same scientific field. Recently in the history of science, it appeared the expectation that scientists should also communicate their work to the general public, not only to the trained public of the discipline in which the research was conducted. In this context, scientists started searching for ways to communicate about complex scientific work in a simple and easy to understand manner. In this presentation we will outline the main techniques in which scientists' voice and write the results of their work for the general public.

**Anahtar Kelimeler:** Communication, science, general public, media literacy, scientific publication

## GENDER STEREOTYPE ON TWITTER

**Ramona Marinache**

**ORCID: <https://orcid.org/0000-0002-4072-8253>**

**E-Posta: [ramona.marinache@unibuc.ro](mailto:ramona.marinache@unibuc.ro)**

**Faculty of Letters, University of Bucharest, Romania**

**Valentina Marinescu**

**ORCID: <https://orcid.org/0000-0002-9882-5902>**

**E-Posta: [valentina.marinescu@unibuc.ro](mailto:valentina.marinescu@unibuc.ro)**

**Faculty of Sociology and Social Work, University of Bucharest, Romania**

### Özet

The 20 century, mostly in the Western world witnessed the fight of women for equal rights with that of men's. The fight was a successful one, but that does not mean that the topic of gender equality has disappeared, it just become more nuanced. Today it is not about the state recognizing the women's rights as citizens; it is about societal stereotypes and prejudices that prevent women from breaking the glass ceiling between them and men. In this presentation we will focus on the ways in which media propagated the gender stereotypes that are still preventing women from obtaining some roles despite having the necessary intellectual and professional capacity. We will emphasize the ways women are presented on a social media platform – Twitter.

**Anahtar Kelimeler:** women; Twitter; news; gender; stereotype; social media

## COMPARATIVE ANALYSIS OF CITIZENSHIP EDUCATION IN THE REPUBLIC OF CROATIA AND THE REPUBLIC OF SERBIA

Igor DOBRAČA

ORCID: 0000-0001-7189-2294

igor.dobraca@unipu.hr

Juraj Dobrila University of Pula (Croatia)

### Abstract

Since the school year 2001/2002, Citizenship education (CE) has been introduced into the education system of the Republic of Serbia in the first grades as an optional subject. Since the school year 2006/2007, CE has been a mandatory elective subject. CE is taught for one hour per week, i.e. 35 hours per year, and assessment is descriptive. In the Republic of Croatia, CE has been taught as a cross-curricular topic since the school year 2019/2020. Cross-curricular topics are achieved by connecting educational areas and teaching topics of all subjects.

The curricula and programs of CE implemented in the Republic of Serbia and the curriculum of the cross-curricular theme CE implemented in the Republic of Croatia were analyzed. Both documents were analyzed at the primary school level. CE in the Republic of Croatia, which is sometimes also carried out as an extracurricular activity, was not the subject of this comparison.

In the Republic of Serbia, in all grades of primary school, the CE curriculum lists the tasks of the subject, while only in the fourth grade are the tasks of the subject divided into three categories: tasks related to understanding and acquiring concepts, tasks related to skills and abilities, and tasks related to attitudes and values. In the Republic of Croatia, the cross-curricular theme CE consists of three domains: human rights, democracy and social community, and each domain influences the formation of knowledge, skills and attitudes of the established educational expectation. Each educational expectation is accompanied by a recommendation for its realization.

According to available reports, the implementation of CE in the Republic of Serbia includes projects and debates, evaluating information in the media or the Internet, while in the Republic of Croatia, the subject teacher decides on the implementation of CE within the subject he teaches.

**Keywords:** Citizenship education, Comparative analysis, Republic of Croatia, Republic of Serbia

## MEASURING FINANCIAL LITERACY OF 8TH GRADERS PUPILS AT JURAJ DOBRILA PRIMARY SCHOOL IN ROVINJ (CROATIA)

**Igor DOBRAČA**  
**ORCID: 0000-0001-7189-2294**  
**igor.dobraca@unipu.hr**  
**Juraj Dobrila University of Pula (Croatia)**

**Ana KOLIĆ MARKOVIĆ**  
**ana.kolic-markovic@skole.hr**  
**Juraj Dobrila Primary School, Rovinj (Croatia)**

### Abstract

Organisation for Economic Co-operation and Development (OECD) define financial literacy as a set of awareness, knowledge, skills, attitudes, and behaviours that enable individuals to make informed and smart financial decisions. Together with improved financial access and adequate consumer protection, it is part of a holistic approach to support financial resilience and well-being.

The aim of this research is to determine the financial literacy of pupils in the final (eighth) grade of elementary school. The research used the Youth Financial Literacy Short Scale, which consist of three dimensions: financial knowledge, financial attitude and financial behavior. The research was conducted in October 2024, and the data was processed in the JASP statistical analysis program.

The study involved 54 pupils, 27 of whom were male. The results showed that 85% of the study participants had a high level of financial literacy. In order to check whether there was a statistically significant contingency relationship between gender and the achieved result, a chi-square test with Yates' correction was conducted. No statistically significant contingency relationship was obtained  $\chi^2(1, N=54) = 0.147, p > 0.05$ . A Spearman's correlation coefficient was also calculated between all three dimensions of the scale, and a statistically significant relationship was obtained only between financial behavior and financial attitudes ( $\rho = 0.349, p = 0.010$ ).

Research in the field of financial literacy can help teachers identify areas where awareness, knowledge and skills need to be strengthened so that pupils in the future are able to responsibly and successfully manage their own finances.

**Keywords:** financial literacy, pupils, primary school.

## PHYSICAL THERAPY AND PHYSICAL ACTIVITY DURING PREGNANCY

Ivana Dzorova, Elizabeta Popova Ramova, Vladimir Apostolov

College for medical cosmetology and physiotherapy, MIT University Skopje, RN Macedonia

Contact author:eliramova62@gmail.com

### Abstract

A woman's body changes dramatically during pregnancy, so tailored physical therapy and rehabilitation programs are needed to maintain maternal and fetal health. Physiological and biomechanical changes associated with pregnancy include weight gain, hormonal changes, and adjustment of the center of gravity of the body's posture. These changes often result in musculoskeletal pain and reduced functional mobility. The aim of our research is to study possible interventions that can help and are not contraindicated during pregnancy and to improve the presence of physical activity during pregnancy. Material and method: to achieve the set goal, we used teaching materials from the Gynecology and Obstetrics course, all physical records for the application of FT, acupuncture, and other interventions during pregnancy. For a broader research, we used keywords: pregnancy, physical therapy, rehabilitation for published papers on this issue, as well as we conducted a survey of a specific group of pregnant women about their physical activity during pregnancy. Results: The results obtained showed that certain exercises, physical activity, hydrogymnastics and massage are strictly divided according to the trimesters of pregnancy, as well as the extent of physical activity among pregnant women was proven, while acupuncture and aromatherapy are strictly specified for which problem and which application. Discussion: Rehabilitation programs attempt to improve overall physical health and prepare for childbirth and postpartum recovery by addressing common pregnancy-related problems, such as lower back pain, pelvic girdle pain and general well-being. Conclusion: Our research confirmed the value of a multidisciplinary approach to prenatal treatment and the advantages of individualized physical therapy and physical activity interventions to improve the quality of life of pregnant women.

**Keywords:** pregnancy, rehabilitation, physical therapy



## NUTRITION CORRECTION AND PHYSICAL THERAPY EXERCISES LIKE ALTERNATIVE POSSIBILITIES TO INCREASE QUALITY OF LIFE BY CHRONIC DISEASE PATIENTS

Boni Popova Ramova<sup>1</sup>, Vladimir Apostolov<sup>2</sup>, Elizabeta Popova Ramova,<sup>3</sup>

<sup>1</sup>Individual researcher, postgraduate studies of Nutrition, Skopje, R N Macedonia

<sup>2,3</sup> College for medical cosmetology and physiotherapy, MIT University Skopje, RN Macedonia

Contact author:eliramova62@gmail.com

### Abstract

The use of complementary and traditional medicine has been empirically used around the world for centuries. New analyzes show that this medicine is used by up to 65% in modern countries where there is a high level of health care. The question arises as to what makes patients use this alternative medicine. **Material and method:** We studied the strategy of the WHO (World Health Organization) 2014-2023 for the application of Complementary Medicine among the population around the world. **Results:** The application of KAM was analyzed in terms of products, applications, education and monitoring of the effect. WHO requests data from all members of the UN, to provide a list of Alternative methods that they practice, who practices them and how the population accepted them. In developed countries, education and application is regulated by law within the Ministry of Health and education for application through the Ministry of Education. Thus, China, which has its own Traditional Medicine, established a special system of education and monitoring the effects of treatment. In our country, there are no educations as part of undergraduate studies for doctors, but anyone can practice it by obtaining a certificate, if it is approved by the Ministry of Health. Some alternative methods such as Supplements, nutrition, Aromatherapy, Yoga, Tai Chi and other exercises are studied in the Colleges of Health Professions for Physiotherapists. **Discussion:** Monitoring the world trends for the application of Alternative methods based on evidence-based media is the future of the development of complementary medicine. **Conclusion:** Education, application and monitoring of the effects of Alternative methods should be regulated by certain protocols, so they will not be abused for material gain, and patients will have their benefits.

**Keywords:** Alternative methods, WHO strategy 2014-2023.

## **MEDIA DISCOURSE ABOUT NUCLEAR WAR IN UKRAINE**

**Valentina Marinescu**

**ORCID: <https://orcid.org/0000-0002-9882-5902>**

**E-Posta: [valentina.marinescu@unibuc.ro](mailto:valentina.marinescu@unibuc.ro)**

**Faculty of Sociology and Social Work, University of Bucharest, Romania**

**Ramona Marinache**

**ORCID: <https://orcid.org/0000-0002-4072-8253>**

**E-Posta: [ramona.marinache@unibuc.ro](mailto:ramona.marinache@unibuc.ro)**

**Faculty of Letters, University of Bucharest, Romania**

### **Özet**

Nuclear threats and other related issues were frequently reported in the media in the post-World War 2 period. It is perhaps not surprising that a return to this topic has dominated the media discourse since the beginning of the Russian invasion of Ukraine in February 2022. The role of media in calming or panicking the population and in influencing opinions regarding the political and nuclear power is known to be significant, especially regarding a topic like 'nuclear power', which is by default linked with mass destruction, death and no compassion or consideration for the future of humanity. Through a complex analysis of the mediated discourse about nuclear-related issues, this presentation explores the role of media in shaping public perceptions and creating a sense of urgency and panic leading to mass hysteria

**Anahtar Kelimeler:** Nuclear threats, war, media coverage, mass hysteria, media discourse,

## ROMANIAN AUDIENCE AND HALLYU

Valentina Marinescu

ORCID: <https://orcid.org/0000-0002-9882-5902>

E-Posta: [valentina.marinescu@unibuc.ro](mailto:valentina.marinescu@unibuc.ro)

Faculty of Sociology and Social Work, University of Bucharest, Romania

Ramona Marinache

ORCID: <https://orcid.org/0000-0002-4072-8253>

E-Posta: [ramona.marinache@unibuc.ro](mailto:ramona.marinache@unibuc.ro)

Faculty of Letters, University of Bucharest, Romania

### Özet

“Soft power” has been fully seized as a diplomatic opportunity by the Republic of Korea. In this presentation we will present the Hallyu spread in Romania and the opportunities for its development in this country. There are several axes of Hallyu’s impact on Romanian society which are presented in the article: educational, cultural and popular culture. The cultural and educational export of Hallyu in Romania offered an example in the success of teaching and learning Korean Studies in Romania. As regards the dissemination of South Korea’s popular culture, the previous researches made between 2011 and-2017 showed that Romanian fans and general audiences of South Korea’s cultural products perceived and decoded Hallyu as a cultural “mix” between the “local” (that is, South Korean) elements and the appeal at a set of “global” (universal) values. More precisely, in the case of Romanian audiences for Hallyu products (TV series and/or K-Pop music) there was a validation of theories regarding the cultural hybrid motivations involved in media consumption and theories emphasizing globalism and of these cultural products, making them desirable and wanted world-wide.

**Anahtar Kelimeler:** Romania, audience, fans, e-learning, South Korea, Hallyu.

## IMPLEMENTATION OF CLOUD COMPUTING IN ENTERPRISE DATA STORAGE: BENEFITS, RISKS, AND SECURITY STRATEGIES

Hilya Hana Putri <sup>1</sup>, Izzati Rohmaniyah <sup>2</sup>, Nailly Taufiqoh <sup>3</sup>

UIN K.H. Abdurrahman Wahid Pekalongan

Email : [hilya.hana.putri@mhs.uingusdur.ac.id](mailto:hilya.hana.putri@mhs.uingusdur.ac.id) <sup>1</sup>, [izzati.rohmaniyah@mhs.uingusdur.ac.id](mailto:izzati.rohmaniyah@mhs.uingusdur.ac.id) <sup>2</sup>,  
[naily.taufiqoh@mhs.uingusdur.ac.id](mailto:naily.taufiqoh@mhs.uingusdur.ac.id) <sup>3</sup>

**ABSTRACT:** The research reveals that implementing cloud computing technology in enterprise data storage offers significant benefits, including operational efficiencies, flexible access from multiple locations, and reduced IT infrastructure costs that are often burdensome. These advantages allow companies to manage data in real-time and improve collaboration between teams and departments. However, cloud deployment also brings risks that must be carefully managed, such as potential data leaks, dependence on service providers, and increasingly complex cybersecurity threats. Data leaks can harm a company's reputation and lead to serious legal consequences. To address these challenges, companies need to implement a comprehensive security strategy, including data encryption, strict access management, and active network monitoring. In addition, regular security audits and selection of trusted service providers are essential to ensure adequate data protection. Further development potential includes enhancing security through innovative technologies and implementing best practices in data governance. With the right approach and effective mitigation measures, cloud computing can be optimally utilized, making it an effective solution for modern data storage needs and maintaining the security and integrity of corporate data.

**Keywords:** cloud computing, data storage, benefits, risks, strategies

## MYKOLA YERMALOVICH: THE HISTORIAN WHO HEALED THE BELARUSIAN NATION FROM THE COMPLEX OF HISTORICAL INFERIORITY

**Siarhei Marozau**

**Independent researcher, PhD in History, Associate Professor**

**ORCID ID: <https://orcid.org/0000-0002-7331-0785>**

**[banifacyj@gmail.com](mailto:banifacyj@gmail.com)**

**Bialystok, Poland**

### **Abstract**

In the 1930s – 1980s, national historical values and landmarks were completely thrown out of Belarusian historiography. Belarus looked like a province in the shadow of the history of Poland, Russia and the USSR. This approach and interpretation greatly impoverished the Belarusian nation in the awareness of its own place in time and space and in the eyes of other countries and peoples, imposed a complex of historical inferiority, poverty and unattractiveness of the own history. The Belarusian national and cultural revival, which began in the late 1980s, needed new scientific landmarks. The first to challenge the established paradigm was the historian and writer Mikola Yermalovich (1921–2000). He had no academic historical education. But, possessing research courage and literary talent, he went against the historical mainstream of that time and was able to debunk colonial myths about his people. He proved that Belarusians are a people with no less ancient, rich and glorious history than their neighbors. Yermalovich placed the main emphasis on the history of Belarusian statehood and the justification of its antiquity. Thanks to his works, the Grand Duchy of Lithuania again became an integral part of the national historical narrative of Belarus. He introduced the issues of the Grand Duchy of Lithuania into the mass consciousness and consolidated this topic at the level of professional discourse. He cured Belarusians of the complex of historical inferiority and stateless nation. Following Vaclav Lastovsky (early 20th century), he proved that the state and political heritage of Belarusians of that time is hidden behind the terms “Russian” and “Lithuanian”. Not all of Yermalovich’s ideas have stood the test of time. He became a classic of Belarusian romantic historiography of the first half of the 1990s. His books became a catalyst for academic historians, who over time began to create serious scientific works on the history of the Grand Duchy of Lithuania.

**Key words:** the Grand Duchy of Lithuania, Mikola Yermalovich, national vision

## GENERATION Z'S KNOWLEDGE AND INTEREST IN SHARIA-BASED INVESTMENT AMONG COLLEGE STUDENTS IN PEKALONGAN

**Naeli Silfana**

**ORCID: 0000-0002-7416-3828**

**E-mail: [naelisilfana32@gmail.com](mailto:naelisilfana32@gmail.com)**

**UIN K.H. Abdurrahman Wahid, Faculty of Islamic Economics and Business, Sharia Economic,  
Pekalongan, Indonesia**

### **Abstract**

This study examines Generation Z's knowledge and interest in sharia-based investments among university students in Pekalongan. Generation Z, who grew up in the digital era, has wide access to information, including about investment. Given that the majority of Indonesia's population is Muslim, sharia investment is a relevant option for them. This study aims to analyze students' level of knowledge about sharia investment as well as the factors that influence their interest. The research method used is field research with a qualitative approach, involving in-depth interviews and document analysis. The results showed that although the knowledge of Islamic investment is quite good, there are still barriers in accession to information and deeper understanding. This research suggests the need for education and collaboration between educational institutions and financial institutions to improve Islamic financial literacy among university students.

**Keywords:** Knowledge, Interest, Islamic Investment, Generation Z

## SYNERGY OF ISLAMIC FINANCE AND SUSTAINABLE ECONOMY: BUILDING AN INCLUSIVE AND ENVIRONMENTALLY FRIENDLY FUTURE

Lia Fatra Nur Laili KAMALIN

State Islamic University of Pekalongan, Indonesia

ORCID ID:<https://orcid.org/0009-0006-6412-1495>

### ABSTRACT

Islamic finance plays an important role in building a sustainable economy through Islamic principles that avoid usury, maisir, and garar. A seminar organized by the Ahmad Dahlan University Islamic Banking Study Program Student Association (HMPS PBS) emphasized the importance of Islamic finance integration to realize sustainable economic justice. In the seminar, it was stated that sharia contracts such as mudarabah and musyarakah can facilitate equitable financing, while supporting environmentally friendly projects and empowering MSMEs. This article reviews the role of Islamic finance pillars in supporting sustainable economic growth and its contribution to achieving socio-economic justice.

**Keywords:** Islamic Finance, Sustainable Economy, Sharia Agreements, Equitable Financing, MSMEs.

### INTRODUCTION

Islamic finance has long been recognized as a different economic system from the conventional system, which is based on the principles of justice, cooperation, and avoidance of harmful practices such as riba, maisir, and garar. It is increasingly relevant as the world faces economic and social challenges, including income inequality and environmental crises. In this context, the integration of Islamic finance is one of the potential solutions to build a more just and sustainable economy.(UAD, 2024)

According to Sugiyarto, Chairman of the Islamic Rural Bank (BPRS), Islamic finance is based on four main pillars, namely morals, worship, muamalah, and faith. By applying these principles, Islamic finance does not only focus on profit, but also aims to create social welfare. Fair financing, both for environmentally friendly projects and micro, small and medium enterprises (MSMEs), is one of the tangible contributions of Islamic finance to a sustainable economy.



## METHOD

The writing of this article is based on data obtained from a seminar held by Ahmad Dahlan University's HMPS PBS, where various materials on the integration of Islamic finance were delivered by practitioners and academics in the field of Islamic finance. The analysis is done by comparing the theory of Islamic finance and the concept of sustainable economy discussed in the seminar. In addition, this article also examines how the implementation of Islamic contracts, such as mudarabah and musyarakah, can support sustainable economic goals.

## RESULTS AND DISCUSSION

- **The Main Pillars of Islamic Finance:** Sugiyarto emphasized that Islamic finance should be based on the four main pillars of Islam: morals, worship, muamalah, and akidah. In its implementation, Islamic finance must avoid elements such as garar (uncertainty), maisir (gambling/uncertainty), and riba (exploitative interest). These four pillars distinguish Islamic finance from the conventional financial system that tends to pursue material gains without regard to aspects of morality and social impact
- **The Role of Sharia Agreements in Realizing Equitable Financing:** Mudarabah and musyarakah contracts are clear examples of how Islamic finance can encourage fair and equitable financing. In a mudarabah contract, the bank or financial institution provides capital to the entrepreneur who then manages the business. Profits are shared according to the agreement, but losses are borne by the investor unless there is negligence from the manager. Meanwhile, a musyarakah contract involves both parties contributing capital and sharing profits and risks proportionally

This profit-sharing principle avoids the exploitation that is common in the interest system of conventional finance. In this case, Islamic finance plays a role in creating economic equality and increasing community participation in economic activities.

- **Islamic Finance's Contribution to Sustainable Economy:** One of the important contributions of Islamic finance to a sustainable economy is through funding environmentally friendly projects and empowering MSMEs. Islamic finance encourages long-term oriented investments, including in the renewable energy sector and businesses that support environmental conservation. A clear example of such projects is financing for the green energy sector, which is increasingly relevant amid the current global environmental crisis.
- **Challenges in Islamic Finance Implementation:** While there are many advantages to the integration of Islamic finance, there are some challenges that need to be overcome. One of the biggest challenges is the low

Islamic financial literacy among the general public. In addition, government regulations and policies that support the development of the Islamic finance industry also need to be improved so that they can be more effective in supporting a sustainable economy.

- CONCLUSION

Islamic finance has great potential to become a key pillar in realizing a sustainable economy. By adhering to the principles of fairness, transparency and profit sharing, Islamic finance not only provides solutions to economic crises, but also contributes to environmental preservation and community empowerment through fair financing. However, to reach its full potential, a concerted effort is needed from the government, financial institutions, and the public in improving literacy and strengthening Islamic finance regulations.

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**TAX ETHICS IN ISLAM: BETWEEN OBLIGATION AND JUSTICE SOCIAL****Sholikhah, M. Khairul Anan****ORCID:**[sholikhah@mhs.uingusdur.ac.id](mailto:sholikhah@mhs.uingusdur.ac.id)[m.khairul.anan@mhs.uingusdur.ac.id](mailto:m.khairul.anan@mhs.uingusdur.ac.id)**K.H Abdurrahman Wahid State Islamic University Pekalongan, Faculty of Islamic Economics and Business, Islamic Economy, Indonesia****Abstract**

This research aims to explore the concept of tax ethics in Islam, with a focus on the relationship between tax obligations and social justice. The method used in the research is conceptual using qualitative methods through literature reviews, collecting secondary data from articles relevant journals. Research shows that taxes in the Islamic view must be managed fairly and transparently, taking into account the community's ability to pay without burdening certain groups. The principles of fairness, transparency and accountability in tax management are very important to ensure that tax funds are used for the public interest. Taxes must be levied according to individual economic capabilities and used for community programs such as education and health. Apart from zakat, taxes are considered important for state needs that cannot be met by zakat. An ethical tax system is expected to increase public trust, while challenges such as corruption and low compliance need to be addressed with strict supervision and tax education.

**Keywords:** Tax, Obligation, Social Justice

## THE STRATEGIC ROLE OF ISLAMIC ECONOMICS IN DRIVING NATIONAL ECONOMIC GROWTH

Dimas Mahdi FAUZAN

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0009-8664-0941>

### Abstract

Islamic economics is an economic system based on sharia principles, offering inclusive and equitable solutions to address the challenges of the modern economy. This article discusses the strategic role of Islamic economics in driving national economic growth, with a focus on its contribution to financial stability, poverty alleviation, and a more equitable distribution of wealth. This approach includes the application of sharia financial instruments such as zakat, waqf, and infaq, which have great potential in improving people's welfare through equitable redistribution of wealth. In addition, the sharia banking industry and sharia capital markets are also key components in supporting national economic growth. By implementing the principles of profit sharing, transparency, and the prohibition of usury, the Islamic financial sector is able to create a stable and sustainable economic ecosystem. On the other hand, the development of the sharia-based micro, small, and medium enterprises (MSMEs) sector has made a significant contribution to job creation and increasing economic productivity. Furthermore, the application of Islamic economics is also relevant in supporting the national development agenda that is oriented towards social and environmental balance. The values contained in Islamic economics, such as justice, sustainability, and the welfare of the people, are in line with the sustainable development goals (SDGs) that have been initiated globally. This article concludes that Islamic economics has a strategic role as an alternative solution in facing various challenges of national economic development. To optimize its potential, synergy is needed between the government, financial institutions, and society in supporting the implementation of Islamic economic principles broadly and comprehensively.

**Keywords:** Islamic Economics, Islamic Finance, Zakat, Economic Development, and Social Welfare.

**OJK: SHARIA BANKING MUST HAVE A POSITIVE IMPACT ON COMMUNITY WELFARE****Siti Rizkia Seprina Wulandari****Faculty of Islamic economics and business, UIN K.H.Abdurahman Wahid Pekalonga, Indonesia****ORCID ID: <https://orcid.org/0009-0008-2502-5809>****Abstract**

The Financial Services Authority (OJK) emphasizes the importance of Islamic banking to have a positive impact on people's welfare through sustainable transformation. Through the 2023-2027 Roadmap for the Development and Strengthening of Indonesian Sharia Banking (RP3SI), Islamic banking is expected to develop from simply Shari'ah-compliant banking to a more holistic Shari'ah-based banking. The main focus is on product and service innovation, such as Cash Waqf Linked Deposit (CWLD), which combines the concept of money waqf with deposit instruments to support regional economic development and improve social welfare. OJK also highlighted the importance of differentiation of sharia products in order to compete effectively with conventional banks, as well as the importance of collaboration between stakeholders to achieve inclusive and sustainable sharia economic development goals.

**Keywords:** Financial Services Authority (OJK), Sharia Banking, Community Welfare, Shari'ah-compliant banking, Shari'ah-based banking, Cash Waqf Linked Deposit (CWLD), Sharia Product Innovation

## THE POWER OF SHARIA ECONOMY: INNOVATION AND COLLABORATION FOR THE FUTURE

Pinky Nila NAWAWIZA

Faculty of Economics and Business, State Islamic University of KH Abdurrahman Wahid Pekalongan

ORCID ID: <https://orcid.org/0009-0002-3121-5285>

### Abstract

Islamic economics has become a strategic force in building inclusive and sustainable global economic resilience. With the principles of justice, transparency, and sustainability, Islamic economics is not only an alternative, but also a significant complement to the conventional economic system. This article examines the role of innovation and collaboration in accelerating the development of Islamic economics for the future.

Innovation in this sector is seen through the digitalization of Islamic financial services, the development of halal products, and the adoption of technologies such as blockchain to increase transparency in zakat and waqf. On the other hand, collaboration between stakeholders, including the government, financial institutions, and local communities, plays an important role in building a strong Islamic economic ecosystem. An example is the establishment of the Regional Committee for Islamic Economics and Finance (KDEKS) in various provinces in Indonesia, which encourages synergy in the development of this sector.

The study results show that Islamic economics can contribute significantly to poverty reduction, welfare improvement, and job creation, especially in countries with a Muslim majority population. With a focus on innovation and collaboration, Islamic economics can be a major driver towards a more inclusive global economic future.

This article concludes that to maximize the potential of the sharia economy, a holistic approach involving various sectors and stakeholders is needed. This will not only strengthen the competitiveness of the sharia economy, but also make it an important pillar in realizing the sustainability of the world economy.

**Keywords:** sharia economy, innovation, collaboration, sustainability, sharia finance, halal ecosystem, zakat, waqf, digitalization.

## THE EFFECT OF RICE PRICES AS A TRIGGER FOR INFLATION IN INDONESIA

**Rafi PRASOJO**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0006-9708-9575>

**Angga Candra WINATA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0005-0224-9517>

**Rafid Naufal AQİL**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0005-2206-9492>

**Lutfiyanti**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0009-5430-7589>

**Hendri Hermawan ADINUGRAHA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0003-5488-8252>

### Abstract

Because the rice planting cycle is getting ready, rice prices are now rising. This abstract's goal is to clarify how Indonesian inflation is triggered by changes in rice prices. Using a review of the literature on the impact of rice prices as an inflationary catalyst in Indonesia, this writing approach draws information from a number of internet sources. The study's findings indicated that, according to price monitoring conducted by the Strategic Food Price Information Center (PIHPS), rice prices increased on a monthly basis, which reduced rice production relative to the main harvest season. According to BI's estimates, everything is still in line with projections, meaning that the value will remain in the range, even below the midpoint, until the end of the year. The weight of rice in the consumer price index is approximately three percent. Moreover, the National Coordination Meeting on Inflation Control also established the measures' complementary effects on reducing the price of food. Five policy steps will be used to pursue the endeavor. The first policy will use market intervention to optimize the Regional Budget (APBD) with the purpose of controlling inflation. To boost agricultural productivity, the second program is to fortify agricultural infrastructure and amenities. The third is incorporating data on regional food stocks and balances to prepare policies for controlling inflation, with a focus on enhancing interregional cooperation. In order to make it easier to distribute goods and services, the fourth policy aims to fortify supply chains and infrastructure. In order to sustain inflation expectations, the fifth policy is to improve coordination and communication amongst inflation control measures. Prior to this, Governor Perry Warjiyo of Bank Indonesia (BI) stressed that measures to control inflation will be stepped up, particularly in predicting El Nino's effects to bring to a drop in inflation in 2024.

**Keywords:** rice, inflation, cycle, policy



## A SCIENTIFIC REVIEW OF THE HARAM OF PORK

Dwi Tika Wulan SARI\*<sup>1</sup>, Reva VELISYA<sup>2</sup>, Octavia Janate AULIANA<sup>3</sup>, Saela RISQINA<sup>4</sup>, Adellia Saniyatuz ZAHRO<sup>5</sup>

<sup>1,2,3,4,5</sup>Faculty of Economics and Islamic Business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

\*ID ORCID: <https://orcid.org/0009-0007-9127-9973><sup>1</sup>, <https://orcid.org/0009-0001-9911-0845><sup>2</sup>,  
<https://orcid.org/0009-0006-2312-5844><sup>3</sup>, <https://orcid.org/0009-0009-6489-6647><sup>4</sup>, <https://orcid.org/0009-0000-3204-476X><sup>5</sup>

### Abstract

This study aims to explain the scientific review of the haram of pork. This research uses the literature review method, which is carried out by collecting, examining, and analyzing various relevant literature regarding scientific reviews of the prohibition of pork from books, journals, and scientific articles. The results show that the prohibition of consuming pork has a strong foundation in Islamic teachings, as stated in the Qur'an, such as QS. Al-Baqarah: 173 and QS. Al-Ma'idah: 3. This prohibition is not only spiritual but also scientific. From a health perspective, pigs are known to host a variety of harmful parasites, bacteria and viruses, such as *Taenia solium* and *Trichinella spiralis*, which can cause serious illness in humans. In addition, the indigestible fat content and the potential of pigs as a medium for the mutation of harmful viruses, such as swine flu (H1N1), emphasize the relevance of this prohibition not only to safeguard the faith but also the health of Muslims.

**Keywords:** pork, haram, health, science, religion.

### INTRODUCTION

The prohibition of eating pork has been an integral part of the teachings of the heavenly religions, particularly Islam, Judaism and some Christian denominations. In Islam, this prohibition is clearly stated in several verses of the Qur'an. For example, QS. Al-Baqarah: 173 states that Allah swt. forbids carrion, blood, pork, and animals slaughtered in the name of other than Allah swt. Similar prohibitions are also found in QS. Al-Ma'idah: 3, which emphasizes that eating pork is not allowed, except in life-threatening emergencies. In the Jewish tradition, this prohibition is enshrined in Leviticus 11:7-8, which calls pigs unclean animals because although they have cloven hooves, they are not ruminants. In fact, in these religions, pigs are often seen as a symbol of decay and impurity (Warohmah et al., 2024) , both physically and morally.

This prohibition is not just a rule, but also has important spiritual and social dimensions. In the Islamic context, the prohibition of eating pork reflects the people's obedience to Allah SWT. (Novianti & Munir, 2017) .

A Muslim abstains from pork not out of fear of its health effects, but as a form of obedience to the laws of Allah Swt. Similarly, in Judaism, this prohibition is considered a form of ritual purity and obedience to God's commandments. This fact shows that this prohibition has long been practiced by humanity, going beyond mere health regulations.

Pigs are the filthiest of animals, eating their own carcasses and excrement as well as human excrement. It likes to be in dirty places, and does not like to be in clean and dry places. Pigs are lazy and do not like to work (forage), cannot stand sunlight, are not agile, but are voracious eaters (preferring to eat and sleep), even the most voracious among other domesticated animals. As it gets older, it becomes lazier and weaker (no desire to pounce and defend itself). Likes its own kind and is not jealous (Mayasari, 2007) .

In modern times, the prohibition of pork consumption has become increasingly relevant, especially in the context of public health. Various scientific studies have shown that pigs are one of the main hosts for harmful parasites, bacteria and viruses (Wijaya, 2009) . One example is *Taenia solium*, also known as tapeworm, which can cause a variety of serious health problems in humans. In addition, pork is known to contain a lot of fat, which is difficult to digest and can increase the risk of cardiovascular disease. Pork consumption has also been linked to high cases of colon and anal cancer in countries where it is a staple food, as found in research presented at the 1986 Annual Conference on Digestive Diseases in Sao Paulo (Zaid, 1997) .

In addition to the risk of parasites and diseases, pigs are also a medium for mutating viruses that are harmful to humans, such as the swine flu (H1N1) and bird flu (H5N1) viruses (Sukendra, 2009) . In the pig's body, these viruses can mutate into new strains that are more virulent and more contagious. This shows that the prohibition of pork is not only relevant in the past, but also essential to prevent current global health threats.

This study aims to explore the scientific basis behind the prohibition of pork. The approach used covers various aspects, ranging from biological and medical to social and moral analysis. By understanding the scientific facts about the dangers of pork, readers are expected to realize that this prohibition is not only based on faith alone, but also has great wisdom in protecting human health and welfare. This study also aims to reinforce the belief that religious rules that come from Allah Swt. always have real benefits, both for individuals and society as a whole.

## METHODS

This research uses the literature review method, which is carried out by collecting, reviewing, and analyzing various relevant literature regarding scientific review of the haram of pork from books, journals, and scientific articles.

## RESULTS AND DISCUSSION

Based on the literature review obtained, the results of the discussion show an appropriate correlation from the perspective of Islam and the world of health. In essence, pork is an animal that is forbidden in Islam. In addition, pork also contains tapeworms that are harmful to health. These worms develop in the 12-finger intestine of humans, and in a few months can grow into adults. The number of tapeworms can reach around 1,000 with a length of between 4-10 meters. These worms continue to live in the human body and excrete their eggs through feces (Kholestyana & Salsabila, 2023) .

Another worm that grows in pigs is trichinosis, which cannot be killed even if the meat is cooked. Apart from worms, pigs also carry other dangerous disease seeds, such as tuberculosis (TB) bacteria, smallpox virus, and protozoan parasites. Pork meat is high in fat and difficult to digest, making it difficult for the body to utilize its nutrients. Pork fat consists of 46.2% saturated fatty acids, 45.2% monounsaturated fatty acids, and 11.0% polyunsaturated fatty acids (Irnawati et al., 2021)

According to a researcher from the Center for Tropical Diseases, CA Nidom, the pig's body is a place where various types of viruses mix and mutate which then produce new viruses with new characters. In fact, currently it is only the pig's body that allows the mixing of avian influenza virus genetic material, because pigs have biological devices that allow virus genetic mixing to occur (Kholestyana & Salsabila, 2023) .

### 1. Classification of Pork

The pig belongs to the mammal family of the species **Artiodactyla**. It lives on all continents except Antarctica. Pigs are said to have been domesticated by humans since 8000 BC. Most farmed pigs come from European wild pigs, apart from China and India. In some parts of Melanesia, pigs are considered a member of the family, while in many parts of Oceania, a person's wealth is calculated by the number of pigs owned. The largest pig-producing country is China with 39.9 million head per year, followed by the United States, Germany, Spain and Brazil. The largest exporter is Denmark with 1.3 million head per year, followed by the Netherlands, Belgium, Luxembourg, France and Canada. In Denmark, the number of pigs is twice the number of people (Hilda, 2013) .

Table 1. Scientific Classification of Pigs

Scientific Classification	
Kingdom	Animalia
Filium	Chordata
Class	Mammals
Order	Artiodactyla
Familia	Suidae
Genus	Sus, Linnaeus 1758
Species	Sus barbatus, Sus bucculentus, Sus cebifrons, Sus celebensis, Sus domesticus, Sus heureni, Sus philippensis, Sus salvanius, Sus scrofa, Sus timoriensis, Sus verrucosus

Pigs have been one of the most prolific livestock (fast-growing and fast-breeding) among farm animals known to date. In 1975, the United States planned that by the year 2000, a sow would produce 28 litters every year. At the time, it was unknown to the United States that in China, the Erhualin, Meishan, Fengjing, and other breeds of pigs used to give birth to an average of 18 litters per birth, so that in two years up to 80 piglets could be produced from a single sow. A sow gives birth on average five times in two years. Indeed, diplomatic relations between the United States and China only began in 1979, so what goes on in China may be less well known (Sihombing, 2004) .

Pigs are a long-nosed, flat-nosed, meat- and plant-eating ungulate native to Eurasia. Pork is difficult to digest as it contains high amounts of fat. Although it is tender and looks delicious, it has thick back fat and oxidative rancidity, making it structurally unsuitable for consumption. Scientific studies in China and Sweden suggest that pork is a major cause of anal and colon cancer. In addition, pork contains dangerous parasites, bacteria, and viruses, so it is categorized as a Disease Reservoir (Wijaya, 2009) .

From an Islamic perspective, pork falls under the category of haram, the prohibition of which is affirmed in the Qur'an. However, Muslims need to understand the scientific reasons behind this prohibition in order to maintain their health and faith. Pork is not only a physical health risk, but also a symbolic reminder to always abide by the rules laid down in the Shariah. As animals with a high degree of adaptation to the environment, pigs often live in unhygienic environments and consume contaminated food, making them an ideal medium for

various zoonotic diseases that can be transferred to humans. Therefore, awareness of the risks of pork consumption should be instilled as a form of self-protection, both in terms of health and faith.

Given the scientific facts and Islamic religious teachings that prohibit the consumption of pork, Muslims need to raise awareness of various food products that may contain pork-derived ingredients. This includes processed products such as gelatin, enzymes or oils that are often used unknowingly in various food industries. This vigilance is important to maintain faith while protecting the health of the ummah. By understanding the health risks caused by pork, Muslims can take the importance of the religious commandment and turn it into an effort to create a clean, healthy life in accordance with Islamic values.

## 2. The Basic Concept of the Haram of Pork According to Islam

Normatively and under normal circumstances, pigs are indeed forbidden to be eaten or consumed by humans. However, the prohibition of pigs does not give humans the right to exterminate them in the world. If this is done, there will be a systematic chain break in the entire reality of the universe, especially the chain of flora, fauna and humans themselves. All normative legal provisions in Islamic teachings can be said to apply only in normal situations as reflected in the doctrine of emergency law for the validity of a legal provision (Mulkhan, 2004) .

In Islamic teachings, the prohibition of consuming pork is explicitly emphasized in several verses of the Qur'an, one of which is found in QS. Al-Baqarah verse 173 which reads:

رَجِيمٌ غُفُورٌ اللَّهُ إِنَّ عَلَيْهِ إِتْمَ فَلَا عَادٍ وَلَا بَاغٍ غَيْرَ اضْطُرَّ فَمَنْ اللَّهُ لِيُغَيِّرَ بِهِ أَهْلًا وَمَا الْخِنْزِيرُ وَلَحْمٌ وَالِدَمُّ الْمَيْتَةِ عَلَيْكُمْ حَرَّمَ إِنَّمَا

Meaning: "Verily, Allah has only forbidden to you carrion, blood, pork, and (animals) slaughtered in the name of other than Allah. But whoever is in necessity (to eat), without desiring it and not (also) exceeding the limit, then there is no sin for him. Verily, Allah is Forgiving and Merciful."

The verse confirms that pork is among the foods forbidden to Muslims, along with carrion, blood, and animals slaughtered not in the name of Allah. This prohibition is unequivocal and applies in general, except in emergencies when a person is forced to consume it to sustain life, without going beyond the limits of necessity.

Food is said to be halal if (Zulaekah & Kusumawati, 2005) :

- It does not consist of or contain ingredients from animals that are prohibited by sharia law for Muslims to eat or are not slaughtered according to sharia law.
- Does not contain ingredients that are unclean according to sharia law.
- Not prepared or processed using ingredients or equipment that are not free from impurity according to sharia law.

- d. In the process of procurement, processing and storage, it does not come into contact or proximity with materials that do not meet points a, b and c or materials that are unclean according to syarak law.

In a hadith, Abu Hurairah r.a. narrated: The Messenger of Allah said: "O people! Verily Allah is the Good, accepting nothing but what is good. Indeed Allah commands the believers with what He commanded the messengers. Allah says, 'O messengers! Eat of the good things and do righteous deeds, surely I am well aware of what you do.' (QS. Al-Mu`minūn: 51). Allah also says, 'O you who believe! Eat of the good sustenance We have given you' (al-Baqarah: 172). The Prophet (may Allah's peace and blessings be upon him) then recounted the story of a man who traveled a long distance, matted and dusty, and he raised his hands to the sky and said: "My Lord, my Lord," while his food was unlawful, his drink was unlawful, his clothes were unlawful, and he was nourished with unlawful things. This Hadith is not only an Islamic principle and legal building block, but also a recommendation for us to eat halal food and leave the haram (Zulaekah & Kusumawati, 2005)

As Muslims, understanding the wisdom behind the prohibition of consuming pork is an important step in fostering obedience to the laws of Allah Swt. while maintaining a healthy body and preserving the environment. Islam not only emphasizes spiritual aspects, but also maintains harmony in human relationships with flora, fauna, and all of His creations. Thus, the balance of life can be maintained, both in terms of faith, health, and the preservation of the universe.

### 3. The Haram of Pork from a Perspective

The prohibition of consuming pork in Islam is not only based on sharia injunctions, but also has a strong scientific basis (Wijaya, 2009)

- i. The meat has a pungent odor
- ii. Pork consumers often complain about the pungent odor of pork. According to a study, the odor is caused by the pig's praeputium often leaking, allowing the pig's urine to seep into the meat.
- iii. A very greedy animal.
- iv. Pigs are animals whose gluttony is unmatched by any other animal. Pigs gobble up all the food that is put in front of them. If the food is gone and he is full, what he has eaten is regurgitated, and then the vomit is eaten again. Even if it is hungry, it eats feces, including its own feces, human feces, and the feces of other animals. Even more disgusting, this animal also likes to urinate carelessly, including urinating on the food it will eat.
- v. Likes to eat dirt

The pig is the only mammal that likes to eat soil. It eats in large quantities and for a long time if not prevented. No wonder the skin of people who like to eat pork has an unpleasant odor.

a. The structure of pork is similar to human meat

The structure of pork DNA is similar to human DNA, both internally and externally, so it is no wonder that pork is often used as a substitute for human anatomy in medical practice. The similarity in structure makes pork difficult to digest by human metabolism. Pork meat has high back fat and is prone to oxidative rancidity, so the chemical structure is not suitable for consumption.

Another scientific reason is explained by Prof. Rachman Noor, an expert in livestock genetics, in his book entitled *Secrets and Wisdom of Inheriting Traits*. It is stated that pigs have a very high level of SINE (Short Intersperse Nucleotide Element) and LINE (Long Intersperse Nucleotide Element) similarity with humans, so eating pork can be considered the same as cannibals and risks causing abnormalities in future generations (Dhuafa, 2022) .

A number of modern studies have also proven that pork contains various significant health risks for humans. Here are the disease risks behind the dangers of eating pork (Kholestyana & Salsabila, 2023) :

a. Parasitic infection (worms)

Eating raw or undercooked pork carries a high risk of parasitic infection. This can happen if the pork consumed contains tapeworms and *Trichinella spiralis* worms. Pork tapeworms are not always dangerous, but they can cause cysticercosis, which can lead to epilepsy. Meanwhile, *Trichinella spiralis* is a parasitic roundworm that causes trichinosis with symptoms such as diarrhea, abdominal pain, or nausea.

b. Liver cancer and cirrhosis

Although it still needs further research, a study suggests a link between eating pork and the appearance of liver diseases, especially liver cancer and cirrhosis. This is thought to be caused by nitrate and nitrite compounds that are often found in processed pork products cooked at high temperatures. The high fat content in pork may also underlie the occurrence of liver disease.

c. Hepatitis E

Hepatitis E infection is usually caused by food or drink contaminated with the virus, but can also come from the consumption of raw or undercooked pork, especially the liver.

d. Multiple sclerosis

Multiple sclerosis is an immune system disorder that attacks the protective membranes of the nerves and spinal cord. Research has found a link between pork consumption and an increased risk of multiple sclerosis. This is thought to be due to the content of prions, which are proteins that trigger nerve disorders and damage.



e. Colorectal cancer

Many studies have shown that consumption of pork and other red meats may increase the risk of colon and rectal cancer. Cooking pork at high temperatures produces compounds that can damage colon genes, causing cells to grow uncontrollably. In addition, pork cured using nitrates and nitrites can also produce compounds that damage DNA and trigger colorectal cancer.

f. Heart disease

Excessive consumption of pork increases the risk of heart disease, such as heart attack and high blood pressure. This is due to its high cholesterol and saturated fat content.

g. Trichinosis

Trichinosis is an infection closely associated with the consumption of undercooked pork. It is caused by the larvae of the worm *Trichinella spiralis*.

h. Yersiniosis

Yersiniosis is a disease caused by infection with *Yersinia* bacteria. Acute symptoms include fever, pain and bloody diarrhea. The infection can also cause reactive arthritis as a long-term consequence.

i. Taeniasis

Taeniasis is an infection of the digestive system caused by three species of tapeworms, one of which is *Taenia solium*. Eating raw or undercooked pork can cause these worms to enter the human body.

j. Balandiatis

Balandiatis is caused by the pig parasite *Balantidium coli*, a protozoan that lives in the large intestine of pigs and multiplies in the digestive tract. If this parasite enters the human body, it can cause dysentery and damage vital organs.

k. High blood pressure

High blood pressure can result from the consumption of pork with a high fat content.

l. Anal and colon cancer

Pork is one of the main factors causing anal and colon cancer. Scientific research in China and Sweden shows that pork is the main cause of anal and colon cancer.

Looking at the scientific facts about what's in a pig, it's clear that all parts of the pig, including meat, bones, blood and more, are forbidden for Muslims to consume, not only because of the Shariah injunction, but also for health reasons. However, there are many products today that contain elements of pork, and we often don't realize it. Many Muslims may not know that a label reading "This product contains substance from porcine" actually means "This product contains pork." Similarly, the label "The source of gelatin capsule is porcine,"

indicates that the capsule is made from porcine gelatin (Hilda, 2013) . Therefore, Muslims need to be aware of products that contain ingredients from pigs, which often go unnoticed, to avoid negative health impacts. This awareness is important so that Muslims can avoid haram ingredients and maintain health according to religious teachings.

## CONCLUSIONS

The prohibition of eating pork in Islam has a strong religious and scientific foundation. Religiously, this prohibition is stated in verses of the Qur'an, such as QS. Al-Baqarah: 173 and QS. Al-Ma'idah: 3, which emphasize that pigs are among the animals that are forbidden to be consumed by Muslims. This prohibition is not only a form of compliance with the laws of Allah, but also contains great wisdom in maintaining the health of the people. Scientifically, pork has been proven to host a variety of harmful parasites, bacteria and viruses, such as *Taenia solium* and *Trichinella spiralis*, which can cause serious illness in humans. It is also a medium for the mutation of dangerous viruses such as swine flu (H1N1) and avian flu (H5N1) and contains fats that are difficult to digest, increasing the risk of metabolic and cardiovascular diseases. These facts confirm that the prohibition of pork consumption is not only relevant to safeguard the faith of Muslims, but also important in the context of global public health. Thus, this prohibition reflects the harmony between religious teachings and scientific facts in creating a healthy, clean and blessed life.

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## THE BENEFITS OF PRAYER

**Muh Fatkhurrozi**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0008-2716-4271>

### **Abstract**

This abstract is written to find out what obligatory prayers are from a scientific perspective. Obligatory prayer is one of the main requirements of Islam that Muslims observe. Prayer can be seen from psychological, social and health aspects. In a health context. Prayer includes physical movements such as bowing, prostrating and standing. These movements can provide physical benefits such as increasing muscle strength and body balance. Prayer also involves deep and regular breathing, which can help reduce anxiety, increase blood circulation, and improve lung function. According to psychology, prayer has the potential to improve a person's mental condition. focusing on physical activity, mental clarity, and spiritual reflection can help reduce stress, increase mental clarity, and provide a sense of well-being. In a social context it can strengthen the Muslim community. When Muslims gather in mosques to perform congregational prayers, this creates feelings of compassion and unity. Prayer is also a good time for social interaction with Muslims, strengthening the ties between them. In the Islamic religion, prayer is one of the main requirements. Prayer is something that is done as an offering to Allah SWT, a sign of respect, and a way to express gratitude. One of the most important aspects in a Muslim's life is prayer. because this allows them to better understand Allah, obtain blessings from society, increase their spiritual awareness.

**Keywords: Prayers, health, psychology, social.**

## MEMORY AND FORM: THE STRUCTURAL DYNAMICS OF ABDULLA'S TRILOGY

**Iosefina Blazsani-Batto, Ph.D.**

**ORCID: 0000-0002-7975-3800**

**[iosebatto@yahoo.com](mailto:iosebatto@yahoo.com), +40744374607**

**Babes-Bolyai University, Faculty of European Studies, Cluj-Napoca, Romania**

### **Abstract**

This paper explores the intricate interplay of myth, memory, and form in Abdulla's trilogy, focusing on how these elements coalesce to create a unique narrative structure. By examining the trilogy through the lens of structuralism and narratology, the study aims to unpack the underlying frameworks that govern the narrative's composition and thematic coherence. Abdulla's work is analyzed as a cultural artifact, where myth serves as a reservoir of collective memory, reflecting societal values and existential concerns. Memory functions as both a narrative device and a thematic focus, creating temporal layers that disrupt linear storytelling while reinforcing cultural continuity. Form, as an integral aspect of the trilogy, is examined through its stylistic innovations, structural patterns, and intertextual references that resonate with traditional and modernist influences.

The methodology integrates textual analysis with a structuralist approach, emphasizing close reading of the texts to identify recurring motifs, archetypes, and structural dynamics. Comparative analysis is employed to situate Abdulla's work within broader literary traditions, highlighting its unique contributions and dialogues with other literary works. This research also draws on cultural theory to contextualize the trilogy within its socio-historical milieu, considering the interplay between individual and collective memory. Primary texts from Abdulla's trilogy are analyzed alongside critical secondary literature to establish a nuanced understanding of the narrative's structural and thematic dimensions.

The findings suggest that Abdulla's trilogy redefines the boundaries of literary form by weaving myth and memory into a complex narrative tapestry that reflects both universal and culturally specific dimensions of human experience. This synthesis of structural innovation and thematic depth positions Abdulla's work as a significant contribution to contemporary literature, offering insights into the dynamics of storytelling and cultural representation.

**Keywords:** Kamal Abdulla, Myth, Memory, Narrative Form, Cultural Theory, Intertextuality, Temporal Layers, Collective Memory

## THREADS OF TRADITION: EXPLORING AZERBAIJANI WEAVING AS A SYMBOL OF CULTURAL IDENTITY

**Iosefina Blazsani-Batto, Ph.D.**

**ORCID: 0000-0002-7975-3800**

**[iosebatto@yahoo.com](mailto:iosebatto@yahoo.com), +40744374607**

**Babes-Bolyai University, Faculty of European Studies, Cluj-Napoca, Romania**

### Abstract

Azerbaijani weaving, particularly its world-renowned carpets, represents a profound synthesis of artistry, craftsmanship, and cultural identity. Rooted in centuries-old traditions, the art of weaving has transcended its utilitarian origins to become a symbol of Azerbaijani heritage, reflecting the region's history, geography, and social values. This paper examines Azerbaijani weaving as a cultural artifact and explores its role in fostering and preserving a sense of collective identity within the nation and among the Azerbaijani diaspora.

This study employs a qualitative, interdisciplinary approach that combines ethnographic fieldwork, archival research, and semiotic analysis. Ethnographic fieldwork involves interviews and participant observation with Azerbaijani weavers to understand their techniques, motivations, and narratives. Archival research provides historical context through the examination of ancient carpets, manuscripts, and museum collections. Semiotic analysis deciphers the symbolic meanings embedded in motifs, colors, and patterns, linking them to Azerbaijani folklore, regional traditions, and socio-political dynamics. Additionally, the research incorporates a comparative analysis of weaving practices across various Azerbaijani regions, highlighting both local variations and cohesive national elements.

The study investigates the intricate symbolism embedded in Azerbaijani carpet designs, including motifs, colors, and patterns. These elements are not merely aesthetic choices but carry deep meanings tied to regional folklore, religious beliefs, and life-cycle events. The research also highlights how weaving practices vary across different regions of Azerbaijan, reflecting local traditions and environmental influences while maintaining a cohesive national style.

The findings offer insights into the gendered nature of cultural preservation, the role of weaving in economic and social frameworks, and the challenges and opportunities posed by globalization. This research contributes to broader discussions on the role of traditional crafts in shaping cultural identity and strategies for preserving intangible cultural heritage in an era of rapid modernization.

**Keywords:** Azerbaijani Weaving, Cultural Identity, Traditional Crafts, Carpet Symbolism, Intangible Heritage

## THE JOURNEYS OF PROPHET COMPANIONS FROM MECCA & MADINAH TO JERUSALEM & BILAD AL-SHAM THROUGH JORDAN

(Al-Omari Route)

**Prof. Dr. Mohammed Waheeb**

**Hashemite University, Queen Rania College of Tourism and Heritage, Department of Sustainable Tourism, Email: mwaheeb@hu.edu.jo**

Abstract:

Archaeological and Cultural Heritage Studies in the last 100 years revealed new facts through field systematic survey, archaeological excavations, lab analysis & comparative studies. Also the artificial intelligence contributed to this field deeply by using aerial photography, VR application, 3D drawings, and GIS technology. The question raised here where is the remains of these routes, markets (Suq) stations, workshops, water installations .... etc. which has been used by companions of the Prophet, the merchants as a trade routes, the armies and individuals. The remains of ancient routes situated between Northern Hejaz to Bilad al-Sham - through Madinah- Mecca Khaibar- Al-Hejer – Tabuk, and to Ayla in Jordan which includes (Jordan, Palestine, Syria, Lebanon as well as Turkey and the Mediterranean Sea were mentioned by early travelers, historians & researchers, but there are no field studies achieved in these routes to document its remains scientifically and to offer more protection measurements to these remains. On the 13th of Ramadan in the year 15 AH, corresponding to October 18, 636 AD, the Commander of the Faithful, Omar bin Al-Khattab, arrived in Palestine coming from Madinah (The City) through several ancient routes and stations still existed along the traditional routes located between villages, cities & country side. Last once he arrived to Jerusalem received the keys to the city. He secured the lives and religious rites of the Christians after a siege that lasted four months, as the Patriarch of Jerusalem, Sophronius, offered to surrender the city that was besieged by the Muslims and pay the tribute, on condition that the Caliph come to Jerusalem to sign an agreement and accept the surrender. The major aims of this project is to follow all these remains (The route & associated structures) dated back to the period of Omar bin Al-Khattab around 636 AD in Jordan as the first phase of this project, while the second phase will include the Northern Hejaz. The Omary Route really represent Elaf Route which was famous during the pre-Islamic Period in Northern Hejaz & Southern Jordan or Bilad Al-Sham. Many old mosques still existed from the Early Islamic Period till now days in different locations along the route alignment, some were innovated and subjected to preservation and restoration processes under direct supervision of Dept. of





Antiquities of Jordan, while other mosques were demolished and washed away by local communities in order to build new one. Few old markets (old Suq) still existed but in ruined condition of ignorance and negatively impacted by human and natural factors. The Elaf route and its relation to Omar bin al-Khattab is clear now and needs more scientific documentation process by using (AI) techniques focusing on Aerial Photography Techniques. Future vision is promising to preserve cultural heritage for future generations of Arab &Islamic world. Keywords: Heritage, Artificial Intelligence, documentation, Routes, Scientific Research.

**NEW ARAB ELAF ROAD (NAER)2025- 2030****Prof Dr Mohannad Tarrad****Professor in Architecture Engineering, Department of Architecture Engineering, Faculty of Engineering,  
Al al-Bayt University, Mafraq, Jordan. Email: [ms-tarrad@aabu.edu.jo](mailto:ms-tarrad@aabu.edu.jo)****Prof Dr Mohammed Waheeb****Professor in Archaeology; Department of Sustainable Tourism, Queen Rania Faculty of Archaeology  
Heritage, & Tourism (QRFTH), The Hashemite University. Email: [mwheeb@hu.edu.jo](mailto:mwheeb@hu.edu.jo)****Nivin Abu Shawish****Ancient architecture, and 3D Virtual reconstruction, Email: [r.niveen@hotmail.com](mailto:r.niveen@hotmail.com)****Abstract**

The proposed project (NAER) derives its main elements from the ancient Elaph Trail, starting from the territory of the Kingdom of Saudi Arabia, intersecting directly with the NEOM project in the far northwest of the Kingdom of Saudi Arabia and the Jordanian border along the Red Sea coast; and then crossing to the neighboring countries, namely Egypt, Jordan, Palestine, Syria, Lebanon and Iraq. After reaching Jordan, the project's routes branch out through several stations and specialized clusters to countries within the geographical scope.

The project's future ambitions extend to 2030 from 2025 and aim to transform the ancient, regional and international path in various aspects of life. The specialized project focuses on the economics of tourism, antiquities and heritage, in addition to the use of artificial intelligence to develop modern technologies.

The project is based on the legacy of the ancient Elaph Road, by which the Arabs set out from the Arabian Peninsula to all parts of the world through land and sea routes, which linked the Arabian Peninsula, especially Mecca and Medina, with the Levant, Mesopotamia, Africa, and Europe.

The new route dates back to the fifth century AD, preceded by the International Incense Road, which dates back to the third century BC, and the Silk Road, which dates back to the second century BC. The road connected more than 100 Arab and foreign countries through trade and transportation. The road forms a land bridge between East and West and opens up future prospects for investment in Asia, Africa, and Europe. Despite the many economic benefits, there are also cultural and social benefits. If the project is implemented, other cultural and social benefits could be realized.

## EUROPEAN UNION CONSUMER PROTECTION POLICIES

Irina-Ana DROBOT | ORCID 0000-0002-2556-6233 | E-Posta: anadrobot@yahoo.com

Technical University of Civil Engineering Bucharest, Faculty of Engineering in Foreign Languages,  
Department of Foreign Languages and Communication, Bucharest, Romania

### Abstract

The purpose of this paper is to analyse the aspects related to consumer protection policies, ranging from ensuring food safety, to ensuring that non-food products do not harm or are dangerous in any way, and ending up with ensuring that the online shopping environment is a safe one, providing safe to use products, as well as safe online payment and receiving the ordered products. Fairness, transparency, and consumer welfare are ensured through these policies. Looking at the historical development of these policies, we can mention the strong influence of the Single Market. Sustainable consumption, product safety, cross border trade are among the larger EU objectives which intersect with consumer protection. Among the directives and regulations, we mention the Consumer Rights Directive, the General Product Safety Directive, and the Unfair Commercial Practices Directive, which have implications for both businesses and consumers. The European Commission and the Court of Justice of the European Union have the role to reinforce these laws.

The expansion of e-commerce has brought to the EU's attention the need to take measures for issues such as online fraud and data privacy. In this sense, we should mention voluntary commitments by online platforms, under the form of the Consumer Protection Pledge for those platforms operating in the EU. The pledge is made up of the Product Safety Pledge and Digital Consumer Rights Commitments. Among those platforms which are listed here are known companies such as Amazon, Etsy, eMag, eBay, Wish, AliExpress, and others.

The consumer protection policy intersects with other policies and concerns, such as the ones related to environmental care, under the form of the environmental implications of consumer behavior and transport emissions.

Consumer trust is ensured by consumer protection policies, both in the products themselves and in the shopping process, in both physical and online stores.

**Keywords:** trust, online shopping platforms, trade, data privacy, product safety

## Introduction

Consumer protection policies have to do with ensuring both food and non-food products safety, as well as a safe environment for shopping, both in face-to-face shopping and online shopping environments. How can we be protected from online fraud, once we use online shopping more and more for comfort's sake? is one of the questions looking for answers when it comes to European Union consumer safety policies. Meanwhile, further issues related to safe online shopping (Your Europe, 2024) can appear, with respect to related EU policies, such as personal data protection.

Can we trust the online medium for safe shopping? Can we trust the face-to-face online medium for the same safe shopping? These are questions that can shape consumer protection policies, since they are enough for offering material for thought related to these policies. We can consider here the period for food validity, criteria for food safety, as well as issues related to customers' data security, in both online and face to face media. How can we check online shopping platforms is one of the first questions that come to our minds. The answer can be given by the Consumer Protection Pledge (European Commission, 2024), and by looking up for a list for those online shopping platforms that signed this pledge. In this way, we can know that these online platforms are trustworthy.

## Materials and Methods

Harm prevention is the main aspect present in the EU documents providing laws, initiatives and regulations of consumer protection. Aspects related to health and prevention of illness on long term, together with aspects related to lack of harmful substances and non-expired foods are part of the EU's documents. Ensuring health and safety based on products other than foods standards are obvious aspects included in the documents related to consumer protection, in addition to ensuring shopping safety and lack of the possibilities of fraud.

The consumer protection policy also ensures fairness and transparency when buying products within citizens' own countries and within other countries. The single market is one advantage offered by the European Union to its citizens, and their safety as consumers is considered part of its responsibilities.

Among the objectives of consumer protection policies, we can find ensuring protection of health and safety, and from buying products that have defects and that can be harmful, ensuring consumer rights, by allowing them to be informed related to their decisions of consuming or buying certain products, as their contents is presented with the possibly harmful effects of certain food ingredients, ensuring market surveillance so that it is in accordance with EU standards, and ensuring redress mechanisms, related to complaints and their resolutions, such as offering compensation in cases of damaged products or frauds.

Product safety and product compliance to standards are regulated based on the General Product Safety Directive, ensuring safety of usage for products sold on the EU market, and clear warnings and instructions provided by manufacturer, and on the CE Marking, which has the role of indicating that EU safety, health and environmental care standards are respected.

Consumer rights are present in contracts based on documents such as the Consumer Rights Directive (Mak, 2011) and the Unfair Contract Terms Directive (Loos, 2015). The Consumer Rights Directive presents standard rights in case of both online and offline shopping. According to this directive there is transparency of information regarding the product before buying it, together with a withdrawal period of 14 days for shopping contracts. The Unfair Contract Terms Directive rules out unfair terms present in consumer contracts. Clear language is ensured through this directive for the customers.

Protection against unfair practices is ensured based on the Unfair Commercial Practices Directive (Incardona & Poncibo, 2007), which is against advertising that can mislead related to a product, aggressive sales techniques, as well as false claims, and on the Misleading and Comparative Advertising Directive (Plotnic et al, 2021), which prevents advertising that can deceive customers and supports fair competition.

E-commers and digital rights are ensured based on the Digital Services Act (Turillazzi et al, 2023) and on the Geo-Blocking Regulation (Trimble, 2024). The Digital Services Act supports protection and safe environment for online shopping and rules out online shopping platforms to sell illegal products and to use any misleading practices.

Dispute resolution and redress are ensured by the Alternative Dispute Resolution Directive (Kofler & Rust, 2023), the Online Dispute Resolution Platform (Rule, 2020), and the Collective Redress Directives (Biard, 2012). These directives are concerned with allowing customers to solve disputed without going to court, by using a digital platform specialized for this, and by allowing customers to be able to start collective actions, if necessary, against companies that go against the EU laws.

Measures related to ensuring consumer information and awareness make use of consumer education and offering transparency over the products and shopping process. These are achieved through the Consumer Scoreboard, which presents consumer conditions in the EU member countries, and through the European Consumer Centres Network, which provides help for customers who have various cross-border issues.

We can mention some examples of consumer disputes, such as the Volkswagen Dieselgate Scandal (Zhang et al, 2021), to which the EU responded by taking the action of a stricter application of consumer rights when frauds were reported, and the COVID-19 travel refunds, which made the EU underline consumer rights during various crises, taking measures such as giving refunds in case of cancelled travel plans.

The safety and health measures related to consumer policies are in a continuous process of development and adaptation to the new technology, especially in the case of online shopping, and in the case of sustainability, by the promotion of green consumption, as well as in the case of having consistent protection for customers in all the EU member countries.

Consumer policies are a matter of ensuring trust for the customers, in both selling services and state of the product, whether it is food or something else.

## Results

As the customer protection policy information is presented online on the EU official site, citizens have access to knowing their own rights, as well as the responsibilities the sellers have towards them. If they have reasons to complain, they will know where to address their complaints, and whether or not they can solve matters to their advantage.

The EU citizens expect advantages based on the fact that their country is member of the EU. Their rights related to various aspects of everyday life are among these advantages, and the EU also takes care that the citizens are fully informed, with information on citizens' rights laid bare before them, in a clear, transparent manner.

Ultimately, the consumer policies are about ensuring the citizens' health and well-being.

## Discussion and Conclusion

As EU citizens, when we buy products online, we may receive a feedback form for the delivery and handling services, as well as for the products themselves. This is a result of the consumer protection policy, in order to ensure that EU standards are respected and that the citizens are benefitting from a safe shopping environment. The same feedback form may be offered by offline sellers, such as pharmacies or supermarkets. In addition, a reviews section where citizens can rate the services offered by various stores, both online and offline can also be found. We could also mention the expression of opinion related to the services and goods of both online and shopping companies on online social media.

In this way, the EU ensures that everything can be exposed, both good and bad points of goods and services, and that the sellers improve their goods and services. Trade has been adapted to the technology and social expectations of citizens today through the consumer protection policy.

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**FREEDOM OF EXPRESSION: BETWEEN RIGHTS AND SAFETY****Irina-Ana DROBOT | ORCID 0000-0002-2556-6233 | E-Posta: anadrobot@yahoo.com****Technical University of Civil Engineering Bucharest, Faculty of Engineering in Foreign Languages,  
Department of Foreign Languages and Communication, Bucharest, Romania****Abstract**

The purpose of this paper is to present two aspects of the freedom of expression in the European Union: offering the right to personal expression and ensuring the safety of the others, as well as our own, in face-to-face and online environments. The European Union understands freedom of expression as a fundamental right, which is present in its legal and political framework. The legal framework regarding freedom of expression is formed by: the Charter of Fundamental Rights, where article 11 offers guarantess for this right, including personal expression and freedom of the press, together with media pluralism; European Convention on Human Rights, where article 10 ensures this right, while also placing restrictions in case of concerns related to national security, public safety, prevention of disorder or crime, protection of health or morals, or the rights of others; and the Treaty on European Union, where article 2 ensures respecting human rights, democracy, and the rule of law. Measures of safety are taken in cases such as the following: hate speech and disinformation, which are present especially in the online content of social media platforms; terrorism, which can take the forms of hate speech and online terrorist related content; for journalists working in the media, political interference and threats. At the same time, issues can appear in the interpretation and application of freedom of expression based on cultural and national differences. As part of the measures taken by the EU to ensure safety, we can find making citizens aware of disinformation, and educating them to distinguish between reliable information and fake one, ensuring transparency and making removing and restricting content decisions clear and fair, together with reducing disparities regarding how various countries of the EU apply laws for freedom of expression.

**Keywords:** fundamental rights, hate speech, disinformation, online platforms, transparency

## Introduction

Expressing personal opinion is one of the rights that are taken for granted nowadays. We know that we are entitled to be allowed to speak freely and to express our opinions on a variety of issues. Of course, this expression of personal opinions can be limited to certain common-sensical rules which respect the others. Additionally, there should be some constraints, since expressing honest personal opinions can lead to making the others feel that they are being judged or even threatened. Therefore, we expect certain constraints to exist even when it comes to the right (Apt, 1998) of personal expression and freedom of expressing personal opinions.

In this sense, hate speech is a very good example of limit placed on our freedom of expression when it comes to personal opinions. We are expected to express ourselves freely, as well as to act freely, as long as we do not harm the others. This is a reflection of John Stuart Mill's (1998) often cited essay *On Liberty*, where we see, based on our current mindset, what we call today the harm principle.

For the countries that are members of the European Union, the rules and laws on the good functioning of society set at supranational level remind of the ones that have been reflected on by philosophers in the past. European Union citizens can realize the fundamental values of the EU are common sensical ones, since they are familiar to them based on their knowledge of history.

## Materials and Methods

Looking over the EU legislation, we can notice how every aspect of freedom of expression (European Commission, 2024; Woods, 2004) is covered based on various documents. The laws are interrelated with the overall legislative framework of the EU, regarding additional laws with respect to respect of human dignity, freedom of thought, of religious practice, minority rights, of the others around us.

The legal framework for freedom of expression is made up of the following documents: the Charter of Fundamental Rights (EU, 2012) (article 11), which offers the guarantee of this right, and which includes the freedom to have opinions, as well as to receive and offer information, both for individual citizens and for the press; the European Convention of Human Rights (Schabas, 2015) (article 10), which makes possible the right of freedom of expression, but which also includes restrictions if there are risks of national security, public safety, crime, health, morals, the rights of the others; and the Treaty on European Union (Blanke & Mangiameli, 2013) (article 2), which ensures respect for human rights, democracy, as well as the rule of law, which are also known as the core values promoted by the EU.

How does the EU address the balance of right and safety? The EU takes measures based on the following: the Code of Conduct on Countering Illegal Hate Speech Online (Bukovska, 2020), which ensures the application of EU principles and laws in the online medium, involving a voluntary initiative for major companies of technology to delete hate speech instances; the Rule of Law Mechanism (Magen & Pech, 2018), which ensures media freedom, as well as freedom of expression for EU member countries, in the case of citizens, and also presents the risks and pressures faced by journalists

and independent media; the Artificial Intelligence Act (Madiega, 2021), which involves using AI for the moderation of content in order to prevent the existence of biases and to ensure freedom of expression; and the European Court of Human Rights Jurisprudence (O'Donnell, 1982), which ensures a balance for those cases that are about freedom of expression in opposition to competing interests such as safety and reputation.

Among the issues for which these documents provided solutions or aim in the future, related to freedom of expression and safety, we can mention the issues of hate speech, and disinformative online content, such as fake news, the existence of terrorism based on forms of speech and related content, threats received by journalists, as well as different cultural understandings of freedom of speech and the application of freedom of speech differently at national levels. In addition, we can mention the Digital Services Act (Trillazzi et al, 2023), which aims to make it the responsibility of online platforms to remove illegal content, and the Regulation on Addressing the Dissemination of Terrorist Content Online (Giglio, 2021), which aims at reducing the spread of such content, the Media Freedom Act, which supports independence of media and pluralism.

The EU also takes measures such as informing the citizens about genuine vs fake information, initiative which is also visible in projects and workshops organized by universities in Bucharest, Romania, where the author of the present paper lives, such as the National University of Political Studies and Administrative Sciences.

Combating disinformation in all media, in fact, is one of the priorities of the EU (Kudrna, 2022).

Democracy is frequently associated by citizens with the freedom of expression. While we live in an individualistic society, encouraging freedom of expression, we are also supposed to respect the rights and freedom of the others. What is more, we also need to consider their safety, when it comes to spreading fake news, or using hate speech. The harm can be towards someone else's psychological well-being, not just physical harm.

The same EU laws for society are applicable to the online media. Apparently, there should not be a difference between the two. The Internet cannot function properly without laws setting limits and constraints. We should take responsibility for our actions, including personal expression, in all media. The impact of hate speech is the same in the online as in the face to face medium, since the psychological effect is present in both.

## Results

Freedom, while being a right and a wish for any individual, is always a matter of constraints. We can consider the constraints placed on us at the level of the family, friends and work circles, and at the level of all our relations with the others in society, even if we have contact only occasionally or just at a single point in time. The fundamental values of the EU are applied, after all, by any human being functioning in any society. We partly internalize these rules of behaviour as we grow up and have social contact outside the family, which is the first one to prepare us for living together with the others, partly learn it from becoming familiar with the laws of the country we live in, or of the countries we come into contact with. Institutional rules are also a source of forming our ways of behaving towards the others.

Freedom of speech, just like freedom of action, should be considered based on taking the others into account. This is what we can infer based on the EU laws.

### **Discussion and Conclusion**

Our capacity for empathy and our natural, instinctive ways of applying moral principles can make up a first guide for our behaviour as EU citizens. We have a way of feeling what is right and what is wrong since we are born with a sense of ethics. Ethics is a currently discussed value, with respect to its practice in various professions and everyday life. We can easily apply this mindset related to freedom of expression, since ethics is, after all, part of all of our activities and personal interactions.

We can refer to the promotion of equality and unity, which are both among the values and principles of the EU. If we are reminded that we are equal, it is a first way of considering the others based on our natural capacity for empathy. We can think of the ways in which we are reminded that human beings are naturally born good, held by some philosophers and psychologists, believing that contact with society and its rules can do harm to human beings, corrupting them. However, rules appear to be necessary, as, according to psychoanalysis, next to instinctual driver, the development of human beings during the psychosexual stages includes the formation of the superego, or the moral instance.

Rules and laws should not be a means of control, but a means of ensuring safety. The EU promotes a welfare society, focusing on equal chances, taking measures of social cohesion, enhancing the development of less developed regions in various areas, including the ones related to resources, education, infrastructure and technological development.

Justice is another aspect ensured by the EU, also intended to promote citizens' individual safety. We can draw parallels between EU laws and good manners codes, when it comes to freedom, freedom of expression included. The EU is against discrimination, related to various issues, such as gender, ethnic minorities, members of certain cultures which are not seen positively, e.g. in case they are at war with a country we support based on EU laws, and so on. Individual differences, therefore, can trigger certain hostile reactions, even in the case of verbal remarks, written or spoken, in any media.

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## ASPECTS COVERED BY THE EUROPEAN UNION TRANSPORT POLICY

Irina-Ana DROBOT | ORCID 0000-0002-2556-6233 | E-Posta: anadrobot@yahoo.com

Technical University of Civil Engineering Bucharest, Faculty of Engineering in Foreign Languages,  
Department of Foreign Languages and Communication, Bucharest, Romania

### Abstract

The purpose of this paper is to present an overview, objectives, legislative and policy measures, as well as challenges and future directions of the transport policy. The EU focuses on increased mobility for working and studying, next to tourism, so transport becomes a priority. The need to offer efficient, sustainable, as well as an interconnected transport system is crucial. Transport policies intersect with other policies, such as economic policies, promoting economic growth, environmental policies, in ensuring reduction of pollution, and social cohesion policies, in ensuring mobility and access across EU member countries.

Among the objectives of the transport policies, we can find sustainability, efficiency and connectivity, safety, social inclusion and accessibility. Sustainability refers to the reduction of greenhouse gas emissions, according to the Europea Green Deal, to the use of alternative fuels, and to the electrification of transport, as well as to the encouragement of shifting from road, rail, and inland waterways. Regarding efficiency and connectivity, we can mention developing a seamless Trans-European Transport Network, providing multimodal transport and removing bottlenecks, as well as increased digitalization for transport systems. Safety is concerned with high standards for all modes of transport, as well as with the reduction of fatalities and injuries. Social inclusion and accessibility refers to making transport accessible to people with disabilities and to the concern with regional disparities in transport connectivity. Among legislative and policy measures, we can mention the European Green Deal and Sustainable Mobility Strategy, and the target of reduction of transport emissions by 90% by 2050. TEN-T Regulation provides a framework for integrated transport network. Single European Sky ensures reduction of environmental impact in air traffic management and aims for modernization of airspace infrastructure and delay reduction. Improving transport is a challenge and future direction.

**Keywords:** sustainability, interconnectedness, safety, European Green Deal, social inclusion

### Introduction

Public transport policies (European Commission, 2024) become important in the context of an interconnected world, where it is expected to allow citizens the opportunity to be able to travel wherever they want to, in other cities, and even countries, as well as in their own city. Issues such as environmental care, social inclusion, digitalization, regional disparity, and safety are among the most common concerns when it comes to public transport. These concerns are also



translated into European Union policies.

Public transport is subject to continuous efforts of improvement, since it is believed that in a smart city it should function well, as much as it should function well when it comes to connecting cities and countries. At the same time, ensuring passenger safety, as well as environmental friendliness when it comes to the fuel used are other issues of concern, next to ensuring that regional disparities are also solved.

Travelling becomes one of the main advantages in an interconnected world, as well as one of the main necessities, since this is how work and study mobilities can be ensured.

### **Materials and Methods**

Transport is part of social life, as it is a place of interaction with the others. Based on this, we can expect the same rules of interaction which are part of any society's and EU laws to be applied. The laws on transport present in the policies and initiatives are part of the present-day mindset promoted by the EU and internalized by its citizens.

While some sets of values, principles and behaviours are nowadays part of our natural reactions, and we apply them almost intuitively, they also need reinforcement and clarification through written rules.

The EU adapts transport to the expectations created by its values, principles and objectives related to the growth of economy, environmental care, social inclusion, and social cohesion. Road, rail, air, and transport over bodies of water are all included in the transport policy. The transport policy shows that the EU has, first of all, a responsibility towards ensuring the citizens' safety through transport services. In this sense, it has high standards for ensuring safety for all types of transport. Injuries should be prevented, based on these standards, and any harm for citizens.

Sustainability is another aspect of the transport policy, which includes reduction of greenhouse gas emissions, according to the European Green Deal (2020), promotion of electric transport and of the alternative fuel use, encouragement of shifting one mode of transport to another, such as from road to railways and inland waterways.

Transport should be efficient, and this is ensured by the development of a Trans-European Transport Network (Sichelschmidt, 1999), by the enhancement of multimodal transport and doing away with bottleneck, as well as by the support of digital transport services.

Social inclusion is present in the transport policy and transport practices in making transport available for the use of all citizens, people with disabilities included, through the offering of needed facilities. Regional disparities should be reduced as much as possible, when it comes to connectivity, which is mostly the case of remote areas.

Among the legislative and policy measures, we can mention the European Green Deal (2020) and Sustainable Mobility Strategy (Loo & du Verle, 2017), the TEN-T Regulation (Aparicio, 2017), the Single European Sky (Motyka & Njoya, 2020), the Urban Mobility Package (Kamargianni, 2016), and digitalization. The European Green Deal and Sustainable Mobility Strategy presents us citizens with a target for reduction by 90% of transport emission by the time we reach 2050,



and also promotes initiatives, e.g. the Alternative Fuels Infrastructure Regulation. The TEN-T Regulation offers a framework for building an integrated transport network across EU countries, and it focus on managing to connect major cities, ports, as well as airports by the time we reach the year 2050. The Single European Sky is a measure proposing to ensure efficiency and reduction of impact on the environment within the air traffic management. It also has as an aim the modernization of airspace infrastructure and the reduction of delays. The Urban Mobility Package ensured sustainable urban mobility plans, and focuses on the objectives of reduction of congestion of traffic, as well as promoting walking and cycling. Digitalization is concerned with introducing intelligent transport systems, automated mobility, and with the development of EU platforms for offering real-time traffic information.

A balance between sustainability and economic competitiveness, the improvement of reducing regional disparities with respect to transport infrastructure, using autonomous vehicles are among the future plans of the EU related to the transport policy.

Transport is the means through which the EU makes possible putting into practice its other laws, regulations, and initiatives, such as mobility. This mobility can be related to working and studying in another country in the EU, as well as to living elsewhere and travelling for entertainment, based on various touristic destinations. For keeping its promises related to increased mobility, the EU needs to endure the right infrastructure, as well as good functioning of transport programmes and helpful staff, together with passenger safety, for all means of transport. Citizens' health is also taken into consideration, together with environmental concerns, when it comes to the laws related to using alternative eco friendly fuels. Harming the environment means harming human beings' health, due to effects of pollution. Laws for intercultural contact reflect civilized relations and manners applied to include today's vies and social realities.

## **Results**

A safe environment for travelling, considering environmentally friendly solutions, as well as safety for passengers, are among the concerns we can express in relation to public transport. In addition to these, the good conditions of transport infrastructure should also be had in mind, since certain areas of the world may be better equipped than others.

## **Discussion and Conclusion**

Transport is, therefore, a matter of rights and safety measures. Once the EU promises its citizens mobility rights and possibilities, it needs to assume its responsibility towards its citizens. The welfare aspect is present in ensuring transport for any citizen, without discrimination. In addition, behaviour towards others and of others towards us are also part of the safety measures with respect to transport.

Offering transport is part of both facilities and rights offered by the EU towards citizens, with responsibilities on both parts.

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## WASSAILING IN ENGLAND AND CAROLING IN ROMANIA

Irina-Ana DROBOT | ORCID 0000-0002-2556-6233| E-Posta: anadrobot@yahoo.com

Technical University of Civil Engineering Bucharest, Faculty of Engineering in Foreign Languages,  
Department of Foreign Languages and Communication, Bucharest, Romania

### Abstract

The purpose of this paper is to analyse two Christmas traditions which look so similar: wassailing in England and carolling in Romania. Just like Romanian children and adults, English wassailers go from home to home in their small community while singing songs that can bring joy and blessings. The practice in England involves a wassail bowl, which contains spiced cider or ale, which the wassailers have with them and share it with their hosts, who give them in exchange, small gifts, such as food and drink. In Romania, caroling does not involve carrying a bowl. The participants just sing and receive small gifts such as food and drink from the host. In ancient England, the tradition of wassailing is pre-Christian, and includes hospitality, a sense of community, as well as celebrating together. In Old English, wassail originates from *wes hæl*, which translates as to be well and to be in good health. For the English practice, wassailing can take place in the household or in the orchard. In the case of the orchard, apple orchards blessing was also involved, so that a good harvest would be ensured for the coming year, and suitable for cider-making. Orchard wassailing included singing to the apple trees and pouring cider at their roots, as well as frightening evil spirits away by loud noises, e.g. firing guns, and banging pots. With Romanian caroling, both Christian and pre-Christian elements are involved as carols are about happiness, blessings for health and prosperity, similarly to the English wassailing, and in the meantime carols sing about Christ's birth.

We notice the same joy, sense of hospitality, community, as well as best wishes and hopes for the coming year, including prosperity, in both cultures.

**Keywords:** cultural awareness, traditions, winter holidays, community, prosperity

### Introduction

The winter holidays are considered to be occasions for each and every country to show how their culture is unique and how they can build distinct culture identity manifestations which, according to the grid created by Baciu (2012), include the following elements: symbols, values, rituals, traditions, practices and personalities.

We can see how these specific rituals, traditions and practices can be formed based on common holidays, such as Christmas, and apparently common, similar traditions, rituals and practices based on what we know as caroling. If we look at English culture, the tradition, ritual, and practice of wassailing, we can call it a form of caroling. Caroling and

wassailing can be compared if we look at two different cultures, in the case of this paper, Romanian caroling and English wassailing. In this way, we can see how, from the common core of this practice, specific cultural creativity can become visible, as well as the intent to reinforce the specificity of each and every culture. As we look at the similarities and differences, we begin to understand what we mean when we say that every culture is unique (Baciu, 2012). This does not mean that there cannot be common elements and similarities across cultures. This means that each and every culture can offer us a completely different and specific perspective on common life experiences. In this sense, celebrating the end of the year is such an experience, which includes its associated sets of rituals, traditions, and practices.

### **Materials and Methods**

What are the differences and similarities between Romanian caroling and British wassailing? In order to understand these differences, we need to look at the history of these practices, rituals, and traditions, at how they go, as well as at the various elements they include, and, last but not least, to consider the symbolic values of the elements found in them.

The etymology and linguistic meanings of both words also constitutes a starting point in the analysis and in understanding the mindset behind these rituals, traditions, and practices. Hickey (2005) mentions that the word “carol” originates in old French, in a word whose meaning is that of “a jolly ring dance.” At the time, when carols were sung, dancing was also included. The word “wassail” originates in Anglo Saxon, and it means “good health.” In old English, it is traced back to the word *wes hæl with the same meaning, to be well or to be in good health.*

Wassailing songs such as *Here We Come a Wassailing* are non-religious carols. They are simply about the joy of celebrating the winter holidays together with the others and having fun. This song is, according to Hickey (2005), “about merrymaking and ensuring good fortune and a heavy apple yield for the following year.”

In the Romanian caroling tradition, most songs are, however, on religious subjects and include religious elements and references. Various references to the story of the birth of Jesus Christ are present. At the same time, the aspect of being surrounded by loved ones, family, friends, neighbours, and the close ones from a small rural community are aspects present both in Romanian caroling and in English wassailing. However, wassailing is more secular, and more focused on the rituals of hospitality and socializing.

The New Year carols are non-religious, however, in Romania, and here we can give the example of The Ploughing Song (Plugusorul in the Romanian language), which is sung by children and youngsters on New Year’s Eve and New Year’s Day, and which sounds a lot like wassailing, since this Romanian carol includes references to agricultural prosperity as well as household prosperity for the year to come, together with blessings for the hosts living in that home. Another example of Romanian non-religious carol is Sorcova, which is a custom on New Year’s Day where the children hold a decorated branch called like the song’s title, symbolizing renewal, vitality, and which is accompanied by wishes of good luck and good health, similarly to wassailing.

Wassailing is a pagan practice which starting with the Anglo-Saxon invasion of England. Williamson (2024) calls

wassailing “the earliest form of caroling,” which started in the thirteenth century. Wassailing was changed into caroling during the 18<sup>th</sup> and 19<sup>th</sup> centuries, when “Puritans and Pilgrims became particularly concerned about Christmas practices degenerating into worldliness” (Priest, 2010).

For the Romanian practice and tradition of caroling, pagan, pre-Christian and Christian elements are interconnected (Streza, 2022).

We can distinguish between house and orchard wassailing in England. Orchard wassailing included rituals related to ensuring a good apple harvest from the trees for the next year, which also meant resulting good cider. Singing to the apple trees, pouring cider at their roots were part of the rituals. As a Romanian equivalent, we can mention another practice related to harvesting and harvest renewal for the coming year, which is however done on November 30, St Andrew’s Day, that of planting wheat, and if it grows it means that the household will be prosperous for the new year.

The wassail is an alcoholic beverage, made of cider, or mulled wine, with spices and which is shared by the wassailers who sing and dance with the hosts. The hosts give the wassailers some small gifts, which include foods and drinks, in a similar way in which in the Romanian caroling tradition, similarly practiced in small rural communities, goes. Singing is mostly associated with Romanian caroling, while wassailing also includes dancing. In the Romanian caroling tradition, there is no wassail, or alcoholic beverage offered by the carolers as part of the ritual. Otherwise, similar good wishes, for a good coming Christmas holiday and good luck for the following year are involved.

Among the differences between caroling and wassailing we can include the time of year and additional rituals when it comes to orchard wassailing. Wassailing became a practice for the Twelfth Night of Christmas, where celebrating with noise was customary, in someone’s orchard, by banging pots in an attempt to scare away the evil spirits and to wake the tree spirits (Notes from the UK, 2021). Twelfth Night falls on January 5, and this was the time the Christians set for wassailing as they took over this custom, which started off as pagan. Caroling for Romanians is mostly happening on December 24, as it is Christmas Eve, and on December 25, which is Christmas Day, although traditionally in rural communities it started in the middle of December and went on with the occasions of Christmas and New Year. Nowadays, New Year carols can go on until January 7, which is called Boboteaza in Romanian, meaning Epiphany Day, when the winter holidays end.

The general atmosphere remains a similar one, with both Romanian caroling and English wassailing, showing how the same values and mindset around the winter holidays and end of the year can be both shared and practiced with some differences. The differences help us become sensitive towards other cultures, as we also see some elements of familiarity. This makes us easily connect with other cultures’ mindsets, as we realize that we share common core values and habits. The differences can make us comfortable enough to be curious.

The common practice of celebrating during the winter time and having winter holidays relies on the time marked by “The agro-pastoral calendar,” which is “sponsored by the cult of the sun,” and which marked the “unit time after which the

archaic societies guided their existence” (Silaghi, 2018). At the time, “the winter season was designated for leisure, inactivity, energy recovery” (Silaghi, 2018).

## **Results**

Cultural awareness can start based on common practices and mindsets, such as celebrating Christmas and New Year, during the winter holidays. For Romanians and the British caroling and, respectively, wassailing are surprisingly similar, while also different. The good relations with anyone, including from our own culture, can start based on commonly shared interests, practices, mindsets and lifestyle, with certain differences being easily accommodated in the larger context. It is the same with relationships with members of other cultures. The winter holidays and the end of the year are occasions to celebrate and to hope for renewal and prosperity, both at personal, spiritual level and at material level, showing us that both spiritual and material resources are needed in order to have a good life. Emotional support from the others also matters, no matter if we live in a rural or urban area.

## **Discussion and Conclusion**

Celebrating Christmas has both a religious and a secular component nowadays. For some families and individuals, the religious aspect may occupy central stage, in both Romania and England, while for some others being surrounded by the dear ones is the main aspect of this holiday. Various attitudes to tradition and religious beliefs can be found nowadays, and there is no single rule about how to celebrate Christmas, or any other holidays, for that matter. However, Christmas is a time when we are curious about how the Christmas traditions, rituals and practices that we hear about today have appeared and, looking back in history, we can find interesting facts and get new ideas on how to celebrate this holiday. We are searching nowadays for what is fresh and what is creative, or innovative, as we are influenced by the rising individualist mindset, promoting self-expression and creativity. We wish for what is new, yet, at the same time, we maintain our curiosity and respect for traditions and for the past. We also maintain a nostalgia about the old days and the old ways in which holidays such as Christmas were celebrated. We may feel that in the old days there was a stronger sense of community, due to the close ties in rural areas, where people lived, worked together and knew everything about each other. Nowadays, with the rise of individualism, and with the high movements of population from rural to urban areas, such sense of community is lost. The solution is to return to traditions and to the traditional ways of celebrating holidays such as Christmas, since these traditions are related to the old way of life back then, which focused on a strong sense of community and emotional connection.

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## THE BASIC QUESTION OF MAN: METAPHYSICAL ACTION AND PRODUCTION

**DOC. DR. SCI. Džana Rahimić Ramić****ORCID: 0000-0002-4842-3067****E-mail: [dzana.buzo@hotmail.com](mailto:dzana.buzo@hotmail.com)****[dzana.rahimic@ff.unsa.ba](mailto:dzana.rahimic@ff.unsa.ba)****University of Sarajevo – Faculty of Philosophy, Department of Philosophy, Sarajevo, Bosnia and Herzegovina****Abstract**

Understanding the meaning of the Greek term *techne* - refers to episteme, to knowledge and the production of knowledge. The source of the understanding and meaning of today's term technique is precisely in the Greek term *techne*, and thus the possibility of transferring knowledge itself in new and non-standard conditions of education in the modern world of science and technology. From Aristotle's determination of the meaning of the term *techne* until M. Heidegger's return to the meaning of this term among the Greeks, the question of *techne* is an unavoidable philosophical question, and now, through the concept of technique and technology, in the modern world of science and an unavoidable question of the science of the modern world. The conditions for the possibility of any knowledge, as I. Kant showed, is that knowledge is possible only if it refers to the objects of experience, and in order to know these objects, phenomena, sensibility and its pure dawns of space and time, as well as reason and rational categories, show the fundamental and autonomous role of metaphysics in the process of producing and using knowledge, as well as man's role and actions in the world in which he is "thrown". This is how the importance of social sciences and humanities in modern science and the world of modern science and modern technology is undoubtedly demonstrated. In the first place, it is about the importance of philosophy, more precisely about metaphysics as an emphasis on action and man. The goal of metaphysics is shown in determining the conditions of every possible cognition, which is actually the task of practical philosophy and metaphysics, which primarily deal with the question of man. So, the common term here is man as one who actively participates, acts and produces, in understanding and building the world in which he is, and what is to be understood in such a way that, even today, the basic question of man is determined by metaphysical foundations and knowledge in general.

**Keywords:** man, metaphysics, *techne*, knowledge

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## ÇARLIĞA KARŞI MİLLETLER TOPLULUĞU: TARİH YAZIMINDA CUMHURİYETÇİ VE EMPERYAL PARADİGMALAR DOĞU AVRUPA'DAKİ BİZANS-AYIN KÜLTÜRLERİNDE

FÖLDVÁRI, Sándor

ORCID: 0000-0002-7825-0531

alexfoldvari@gmail.com

Debrecen Üniversitesi, Beşeri Bilimler Fakültesi, Debrecen; Macaristan  
Araştırma Bilim Adamı (Kıdemli Araştırmacı) ve Litvanya Dili Profesör

### ÖZET

Erken Modern Çağda, Doğu Avrupa'da, Polonya-Litvanya Topluluğu, Habsburg imparatorluğu veya Osmanlı İmparatorluğu kadar güçlü bir devletti. Korkunç İvan zamanında Çarlık Muskovisinden çok daha güçlü ve daha ağır bir devletti. (Polish-Lithuanian... 2001; Bumblauskas, 2010). Burjuva kültürü burada Avrupa tarzında geliyordu. Devletin yapısı soyluların cumhuriyetiydi; soylu, kralı tahttan indirmeyi bile başardı ve tahttaki halefi her zaman soylular cumhuriyeti meclisi tarafından seçildi: Sejm. Rusya'da iken, yüce çar boyarların sakalını bile kesebilirdi. Bu kardeşlikler, herhangi bir büro veya devlet gücünden bağımsız olarak okulu ve baskıyı yönetti, bunu Ortodoksluk ruhu içinde yapmış olsalar bile. (Isaievych, 2006.) Sonuç olarak, Anderson'ın (1991) ulusal bilincin ortaya çıkışı ve kitap basımının keşfi hakkındaki modeli, Polonya-Litvanya Topluluğu'ndaki gelişim süreçlerine de uygulanabilir. Anderson Protestanlığın rolünü vurguladı. Din kültürü, Polonya-Litvanya Topluluğu'ndaki Ortodokslukta da benzer bir türdeydi, ancak Muskovya Çarlığı'nda hiçbir şey yoktu.

**Anahtar Kelimeler:** Polonya-Litvanyalı Topluluğu, Zenginlik, Muskovya, kitap kültürü, itirafçılık, Avrupalılaşma.

## COMMONWEALTH VERSUS TSARDOM: REPUBLICAN AND IMPERIAL PARADIGMS IN THE HISTORIOGRAPHY OF THE BYZANTINE-RITE CULTURES IN EASTERN EUROPE

FÖLDVÁRI, Sándor

ORCID: 0000-0002-7825-0531

alexfoldvari@gmail.com

Debrecen University, Faculty of Humanities, Baltic Studies, Debrecen; Hungary

Research Scholar (Senior Researcher) and Lecturer of Lithuanian Language

### ABSTRACT

In the Early Modern Age, a huge state existed in East Europe, that is, the “Res Publica” (Polish Rzeczpospolitya), which is to be called the Polish-Lithuanian Commonwealth. This Polish-Lithuanian state was so powerful, as later the Muscovian state in the epoch of Peter the Great, moreover, yet in the 16-17 cc, the Polish-Lithuanian Commonwealth was even much more powerful and heavier than Russia in Moscow in the time of Ivan the Terrible and the first Romanovs. (Polish-Lithuanian... 2001; Bumblauskas, 2010). We seek the causes of such a development and why the civil, bourgeois culture had here been developing in the European way.

The first reason was the structure of the state. The Commonwealth was a republic of the noblemen, that is, the members of the gentry elected the king, who was able even to be dethroned, and the successor on the throne was never an ‘heir’ but always elected by the assembly of the noblemen’s republic: the Sejm. While in Russia the almighty tsar could even cut the beard of the boyars, in the case they did not stay always at the tsarist court, to prevent them from making any resurrection at their respective lands against the almighty, thus the tsar ordered the high aristocracy to stay at him in the capital, with purposes to keep them away from ascending to the throne — at the same time, on the Ukrainian and Belarusian lands, a republican-type state was flourishing, in which the gentry elected the king itself, and this king was not almighty but a servant of the republic, of the ‘res publica’ – Rzeczpospolitya (Uspenskii, Zhivov, 1996.).

The second reason was the bourgeois development that resulted in the formation of the Orthodox brotherhoods on the Ukrainian and Belarusian lands, which were confraternities of the secular citizens, thus different from the Western confraternities (those were under the control of the Catholic clergy), de facto independent from the church (de jure Stauropegian: depending only on the control of the Patriarch in Constantinople), civil associations. Most of them gained the right of ‘Stauropegy’, thus the independence from the local bishops and the archbishop-metropolitan, under the formal control of the patriarch in Constantinople, who sat far away and was subordinated politically under the Turkish Sultan. (Isaievych, 2006. Tymošenko, 2007.) These

brotherhoods managed the schooling and printing independently from any clerical or state power, even though they did it in the spirit of Orthodoxy. The latter gave the frameworks of the confessional identity, consequently, the model of the unfolding of the national consciousness and the discovery of printing, by Anderson, 1991, can be applied to the processes of development in the Polish-Lithuanian Commonwealth, on its Eastern territories as well.

The third factor was the European character of the culture. The aforementioned Anderson (1991) highlighted the role of Protestantism in the printing and national consciousness. The religious culture was of a similar type in the Orthodoxy in the Polish-Lithuanian Commonwealth, too. The great process happened to the Western religious world, it was the Confessionalization, the “institutionalization” of social and cultural life, the management of religiosity by civil associations of the citizens, appearance of the religious and national consciousness. Confessionalization took place here, too, but nothing in the Muscovian Tsardom. Eastern borders of the European culture and society stretched there, where the borders of the Polish-Lithuanian Commonwealth. (Magocsi, 1991:46.) — These factors resulted in the ‘statesmen’ and ‘warlords’ managed the social and political life of the Rzeczpospolita, while in the Muscovian Tsardom, these were dictators and adventurers.

**Keywords:** Polish-Lithuanian\_Commonwealth, Muscovy, book-culture, confessionalization, Europeanization.

## 1. İNTRODUCTION: THE SENSE OF THE POLISH-LITHUANIAN COMMONWEALTH AND THE ACTUALITY OF THE TOPIC

Lately, in 2022, we celebrated a sad jubilee: 250 years ago, 1772. on August 5, the Kingdom of Poland, and the Grand Duchy of Lithuania, which had existed as a state union since the sixteenth century, were for the first time divided between the neighboring great powers: the Russian Empire, The Kingdom of Prussia, and the Habsburg Empire. The fate of the pieces was different: in the Russian Tsardom a cruel repression and bestial destruction of anything that remained from the society and culture of the Polish-Lithuanian state, thus not only the forced russification but also the evil and intentional smashing of the European heritage these territories brought from the former state which they developed in and decreasing the social development and lowering consciously to the level of Asiatic despotism. In the Kingdom of Prussia, the first happened albeit the latter went exactly the opposite: the Germanification went “successfully” denying the literacy in local Slavic languages thus the Polish as well, at the same time the socio-cultural development made increasing impacts. As a result, even in recent Poland, the “Western” cultural regions are different in mentality, political culture, and interpersonal relations as well. The third, smallest part of the former Polish-Lithuanian State under the

Habsburg rule, in Galicia, preserved to a relative extent, under the weight of contradictions of censorship, as the Polish as the Ukrainian cultural heritage, and the poor but possible opportunities for nation-building in the Modern Age.



**1. Figure The largest extension of the Polish-Lithuanian Commonwealth at the time of the Peace Treaty of Dewolino, 1618.**

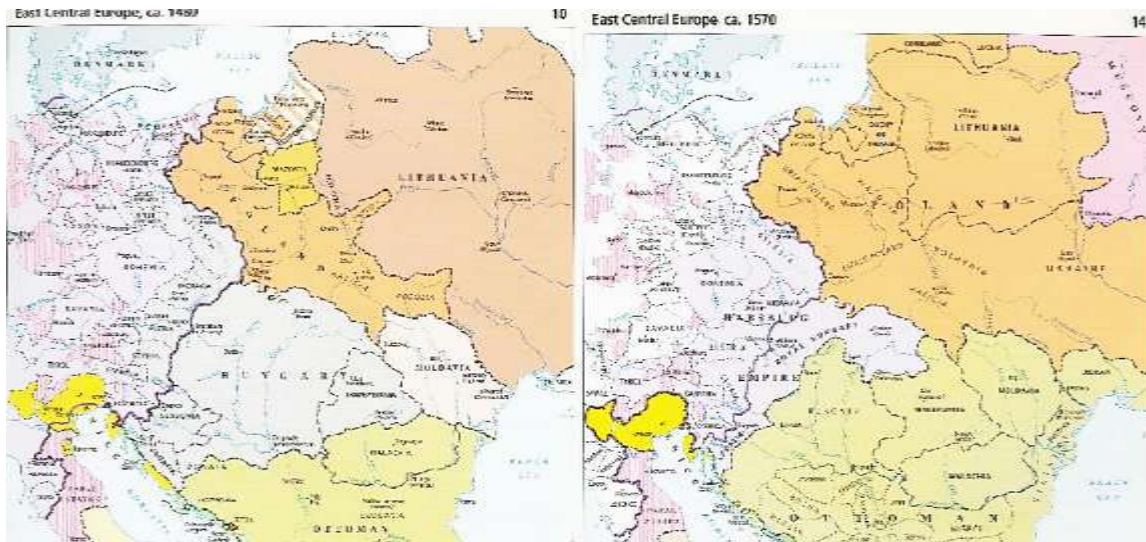
(Source: [https://en.wikipedia.org/wiki/File:Truce\\_of\\_Deulino\\_1618-1619.png](https://en.wikipedia.org/wiki/File:Truce_of_Deulino_1618-1619.png))

This later situation resulted in the superficial onlooker approaching an anachronistic view back to the Early Modern Age, too, and a false view may demonstrate that the European culture and society existed and developed only on those territories that show off the European heritage nowadays, thus in the former Prussian and former Habsburg territories, but not on the Eastern terrains, which the Soviet Union and earlier Tsarist Russia impacted on. Albeit it is a projection of the recent conditions back to the past. On the contrary, those territories were destroyed by the Russian Tsardom, which had earlier been in the late Middle Ages and mainly in the Early Modern Ages not only “European” ones but even parts of the largest and most powerful state of the Early Modern Europe. This was, of course, a republic of the gentry only, and that gentry was in a significant part Polish. Albeit not entirely and not everywhere.

The Polish-Lithuanian Commonwealth (furthermore PLC, 1569-1795) was created by the Lublin Union in 1569 as a continuation of the Polish-Lithuanian Personal Union and consisted of the Grand Duchy of Lithuania (furthermore GDL) and the Polish Republic (Rzeczpospolita, ‘republic’ in Polish). (Starčenko, 2021) However, the latter was a kingdom with kings elected only by the nobility, and the membership of the ‘parliament’ (Sejm in Polish) was based on social rank. (Lukowski, 2001.) The Grand Duke of the GDL was



elected by the noble establishment, too, respectively; however, the Lithuanian Grand Duke had already earlier been elected, according to the principle of the *idoneitas* ('eligibility'). (Mickunaite, 2006.) The noblemen's republic in PLC was unique in contemporary Europe and the -relatively- most democratic system of government within the frameworks of a feudal state, much differing from the Eastern neighbor Muscovy of a semi-Asiatic system of the state. (Dunning. 2001.; Crummey, 2001.) This system was preceded by the Polish-Lithuanian personal union (1386-1569), but the structure of the social system still changed a bit in the PLC. (Halecki, 1919-1920)



**2. Figure The Polish-Lithuanian Personal Union, 15th c. (left), and the Polish-Lithuanian Commonwealth, 16th c. (right) Source: Magocsi, 1991, maps No.No.10 &14, respectively. – Visible, the Polish Kingdom was a small weak state in comparison with the huge Grand Duchy of Lithuania, but after the Lublin Union the latter lost its southern part, and the territory of the Polish Crown was enlarged with the Ukrainian territories. — The GDL still contained Smolensk and Chernihiv and territories to the East of these towns in the 15<sup>th</sup> century, but the Muscovian Tsardom conquered these Eastern terrains in the Livonian war and these were not gained back by King Stefan Bathory in the Livonian War but after him by King Sigismund in the Polish-Russian War in 1609-1618**

The Polish-Lithuanian Commonwealth was the largest state in contemporary Europe, equally powerful with the Habsburg Empire and the Ottoman Sultanate. (Magocsi, 1991:46.) The erudite statesman, King Stephen Báthory, defeated the mad tsar of Muscovy, Ivan the Terrible, who was in such a measure mentally sick as he killed even his son. (Platonov, 1974. Cherniavsky, 1968. Keenan, 2006.) The Commonwealth reached its largest territory in the late 16<sup>th</sup> – early 17<sup>th</sup> cc., covering the Baltic lands, too, up to the northern edge of Livonia, even the Estonian city Tartu (then Dorpat) belonged to this huge federative state (we use “imperium”



only for Muscovy), while the Russian imperial expansion was repulsed. We here focus on the causes and conditions that led to the heyday of the Polish-Lithuanian Commonwealth.

## **2. THE BOURGEOIS PHENOMENA IN THE SOCIAL STRUCTURE OF THE POLISH-LITHUANIAN COMMONWEALTH.**

### **2.1. The Republic in the Framework of a Constitutional Monarchy in Opposite to the Muscovian Dictatorship**

Civil development reached a significant level due to the circumstances of the constitutional monarchy – albeit it seemed to be almost impossible within the frameworks of the Russian authoritarian state. Thus, deep structural differences appeared between the Commonwealth and Muscovy. The Polish king was elected by the parliament, the Sejm. Parallely, the Lithuanian Grand Duke was elected by the “Little Sejm”. (Rachuba, 2002. Kiaupienė, 2005) The Polish monarch had been operating as an “administrator”, primus inter pares — on the contrary the despotic almighty Muscovian tsar had the right to cut the beard of his boyars. The efforts by Boris Godunov to make some small steps toward a European constitutional monarchy failed, and the anarchy continued under Shuysky. (Platonov, 1973.) Warlords in Muscovy were loitering ritters such as False Dmitries I and II, while in the Commonwealth the hegemons and warlords were statesmen (such as the Ostrogorsky princes were patrons of the confessional identification).

King Bathory’s chief general of all troops in the Commonwealth was Gáspár/Kasparus Békés, who came from the land of his earlier reign. (Bojtár, 1988.) The siege of Polock (the third greatest “mother-town” of the East Slavic “Ruś” after Kyiv and Novgorod) succeeded also due to 150 officers of Transylvanian origin and their troops, who fought against Muscovy, together with the people of Grand Duchy of Lithuania (which covered the contemporary Belarusian lands as well). Another warlord, Márton/Martinus Berzeviczy, became a landlord in Kurland, thus in the Baltics, and a Polish nobleman, too, included officially into the Polish gentry, married on a daughter of an upscale Polish family. His diplomatic activity resulted in the Turkish Sultan providing troops and finances for the campaign against Ivan the Terrible, too. (Földvári, 2024.)

All of Europe was afraid to put in contact with the Muscovian Tsardom. Between 1136 and the first half of the 13<sup>th</sup> century, Novgorod became the largest Russian state, expanding from its central territory on lakes Ladoga, Ilmen, and Peipsi to Karelia and the White Sea in the North, to the Baltic Sea in the West, and the Ural Mountains beyond the River Northern Dvina in the East. (Birnbaum, 1981:17–26; Yapin, 1998:5–12; Halperin, 1999) The most Western city of the State Novgorod and at the same time the most Eastern member of the Hansa League was Yamburg, which is now named Kingisepp, after a Communist revolutionary activist, whose name the recent Russia inherited from the Soviet Union but has been keeping even nowadays. Novgorod with

subordinated populated places took care of ensuring financial and trade ties and, therefore had a good reputation among the cities of the Hanseatic League. (Winckler, 1886:7-14; Angermann & Friedland, 2002; Rybina, 2009; Mühle, 1991) On the contrary, then when the Novgorodians were subordinates of Muscovy (and later even destroyed in 1570 by the “Massacre of Novgorod” by Ivan the Terrible), already Western trade centers could be afraid that the new authoritative, despotic Moscow State could not guarantee the security of economic and financial connections, because the interests of the Moscow tsars were just political, just imperial, while the interests of the City-Republic of Novgorod were economic. (Földvári, 2024)

Therefore, in response to the refuse, Tsar Ivan IV (“The Terrible”) conquered and ruined the Hansa towns in Livonia, destroyed the buildings, killed and/or deported the local population, and imposed the Russian inhabitants, built Orthodox churches over the Lutheran ones, such as the huge Orthodox Cathedral on the Cathedral Hill of Tallinn (“Toompea” in Estonian), but it was only a demonstrating act of the conqueror and the buildings were much larger than the ration of the forced immigrants: after the Muscovian Tsar was defeated by the Polish King Stefan Bathory, the Western Christianity and the local population were restrengthened. (Esper, 1966) The Livonian War resulted in the ruination of the flourishing Hansa towns in the Baltic region, as well as the German tradesmen were liquidated and replaced with some forced newcomers. It is very clear why the citizens of Livonian towns and those of the entire Hanseatic League, were mostly afraid of any connection with Muscovy – although they had previously been in good trade connections with Novgorod. (Földvári, 2024. )

## **2.2. Confraternities of Burghers as Phenomena of Bourgeois Development**

The printing houses of Orthodox Confraternities and their schools were phenomena of the civil (bourgeois) society in the Commonwealth, building a free-market economy and capitalist society. (Földvári, 2021) They accepted European cultural influences (such as the “Confessionalization”, and institutionalization of the cultural spheres) – as even some Russian historians are of this opinion (Sidoroff). From the centralized Muscovy the first printer, Ivan Fiodoroff, was to escape to Ukrainian lands where his activity flourished and led to the publishing of the first complete printed Bible in Cyrillic letters in Ostrog 1581. Engraves of its title page were identical to the title engravings of the Lithuanian Catholic Postilla by Daukša, the Jesuit monk (1599), and of the Lithuanian Lutheran Postilla by Morkūnas in 1600, too. (Gronek, 2016. Makarenko, 1926.) The “confessionalization”, reflected in the printing, led to the proto-national identification, as Anderson, 1991 stated out.

The origins of brotherhoods from the guilds still have been a matter of debate, but it seems to be the most acceptable explanation among others. Mironowicz, a Polish historian (of Belarusian origin) in his book about the Brotherhoods highlights this model from the four different models of the origins of the brotherhoods.

(Mironowicz, 2003) If so, the brotherhoods (confraternities) evolved from the guilds because Roman Catholic oppression was too strong in the guilds, thus Catholics demanded financial and other services from Orthodox members, too, hence Orthodox members protested together, and formulated associations of laymen, and these associations then evolved to confraternities. Therefore, these associations appeared very parallelly to the western protestant associations, thus the processes in the Rzeczpospolita were similar to those processes that led to the Confessionalization in the West — considering rather Schilling's model on Confessionalization and less that of Reinhardt's, in those nuances which they differ in. (Földvári, 2023)

The lack of brotherhoods in Muscovy must be explained by the backward bourgeois development in the authoritarian Tsarist Russia. The bourgeois craftsmen of Orthodox confession were capable of defending their interests and preserving their Orthodox confessional identity, according to the recognized works published by Ya. D. Isaievych mainly as for the role of brotherhoods in preserving the Orthodox religious cultural heritage and confessional identity of Rutheni (Old Ukrainians and Old Belarusians).

The first brotherhood's typography and the most influential one, was that of the Lviv Stauropegy Brotherhood. Noteworthy, Lviv (Leopolis) was a merchant town with Armenians, Jews, Poles, and other nations as well, beyond the Ukrainians (Ruthenians). Armenians printed their first books in Venice, Cracow, and Lviv. (Dashkevich, 1962; 1976) Burghers printed books for the market, and burghers purchased them for private reading, too, far not only for church use. This led to the cultivation of the (old) Ukrainian language, for burghers wanted to read books understandable for them, and they paid for that. (Földvári, 2023a)

The first printing house managed by the confraternities was established by the Vilna brotherhood, which published a “Commented Gospel” parallelly with the Romanian *Tilcul evangeliilor* (BRV № 13). Those Slavic peoples of the Commonwealth followed the Byzantine Confession, and integrated it into their “confessional identity”, while Muscovy built its imperial complexes with the “Third-Rome Ideology”, thus the “Byzantine” meant there was a political ideology instead of its original cultural and spiritual heritage. (Fennell, 1995:20–21)

### **2.3. The Role of Cultural Identification**

Founding the Vilnius University (still a Jesuit academy, 1579) was an act by Báthory as an enlightened hegemon of the GDL; it is worthy to note, that another Jesuit academy was founded by him in the same 1579<sup>th</sup> year in Polock, the great town just recaptured from Ivan the Terrible with such much effort it was mentioned above – for the Slavic part of the GDL he established such a great educational and science center as for the Lithuanian part, being a good hegemon of the GDL, taking care on each component of the Duchy. No such case could occur in the Muscovian Tsardom.



### 3. CHANGES IN THE RESEARCH APPROACH: THE DECOLONIZATION INSTEAD OF THE EMPIRE PARADIGM.

#### 3.1.. Decolonization as an approach in the historical sciences

Decolonization appeared lately as a new paradigm, resulting also requesting the rethinking of earlier terms and values. (Jansen, et al. 2017) It can be and must be applied to describing the Polish-Lithuanian Commonwealth (Furthermore: PLC), especially in its heyday. As a result, it appears that the structural divergences made the Commonwealth different from its Eastern neighbor, the Muscovian Tsardom. The latter was and has been essentially, ab ovo, structurally aggressive and expansive empire-state, as it has been highlighted by Prof. Volodymyr Kravchenko, emeritus Director of CIUS in his lecture about the socio-cultural background of the Russian aggression against Ukraine (Kravchenko, 2022.) Therefore, it is an outdated approach to over-evaluate the Polish King and Lithuanian Grand Duke S. Báthory as a powerful ruler, who defeated another hegemon, Tsar Ivan the Terrible, which met the expectations of the “empires-paradigm” in the break of the 19/20 cc.

#### 3.2. The Empire-Paradigm and the Culmination-Development Scheme

The earlier paradigm, which preceded the decolonization, can be called the “empire”-paradigm, history was constantly regarded as the moving of empires, their dawn, heyday, and decrease, according to the neo-Hegelian German historiography dividing everything for the “Früh-, Hoch-” and “Spät-”, thus the styles in the arts, historical periods, history of countries, urbs, and any social phenomena, e.g.: “oder auch in gleichartiger Rhythmik kleinerer Kunstabschnitte wie in jener Rhythmik von Früh, Hoch, Spät von Romanisch, Gotisch, Renaissance, Barock usw.” (that is: “or also in the same rhythm of smaller sections of art as in that rhythm of early, high, late of Romanesque, Gothic, Renaissance, Baroque, etc.”, Hamann, 1916:104) – “Mit Unterscheidungen von „früh, spät und nach" oder „erste und zweite" werden alle Entwicklungsperioden auf ein Kriterium bezogen” (that is: “With distinctions from "early, late and after" or "first and second", all entickling periods are related to one criterion”, Neuloh, 1960:63) – “Nachkapitalismus... Ihre Kriterien entstammen entweder ressentimentbelasteten Vorstellungen (z. B. Kapitalismus in der Stufenordnung von Früh-, Hoch-, Spät- und Nachkapitalismus)”. (that is: “Postcapitalism... Their criteria come from either resentful ideas (e.g. capitalism in the order of stages of early, high, late and postcapitalism)”, Neuloh, 1960:62) – The social entities should unfold and develop on the pattern of the biological organisms and races, mostly due to the impacts of the Hegelian philosophy and the political ambitions of powerful states in the 18/19<sup>th</sup> cc. (Mallmann, 1971)

The “empire paradigm” made an impact on the historical sciences even more than a single famous book by Gibbon (1832). As for our topic, it led to false conclusions in the case of Báthory, too. Not only by providing

naïvely the Hungarian pride about the “great ruler of Transylvanian origin” – as if others had not been capable of becoming such great statesmen (thus not rulers but statesmen)–, but in a broader sense, too: in a result of the “empire-paradigm” in the Hungarian historiography the personal qualities of Báthory were overemphasized, though he was an extraordinary and excellent statesman with European erudition.

Báthory’s personal qualities did not explain his victory, for Ivan The Terrible also was an extraordinary personality and wanted to increase his empire in political also cultural aspects as well: he sent envoys to Germany and German-contacted territories in the Baltic region, the Hansa-towns, and asked them to bring to Moscow printed books, which were a new phenomenon in that epoch; moreover, the Lutheran confession was spreading in Moscow and Ivan IV (The Terrible) himself visited those circles which the new confession and new ideas of the bourgeois cultural development were taught in. (Földvári, 2024) However, the person who brought printed books from Germany, was burned in Moscow, and any new innovative cultural impact was evaluated as a suspicious, heretic, and evil thing (which pejorative approach to any Western innovation remained up to nowadays), as later it happened to Ivan Fiodoroff, the initiating person in the East Slavic book printing, who was sacked from Moscow, and then he got a good home and support to his printing activity in Ukrainian terrains, thus in the Polish-Lithuanian Commonwealth, which led to the printing of the whole Bible in East Slavonic terrains, the Ostrog Bible in 1581. (Sidoroff, 1979.) Hence, the social structure and the development of the terrain of the question were even more determining factors than some personalities.

How paradigms in sciences are successively overturned, has been introduced and presented in the avowed book by Kuhn (1962). All historians of science today are familiar with this seminal work by Kuhn, which provided insights that have guided our thoughts on this subject since the sixties. As for the decay and collapse of empires, ever since Edward Gibbon’s *The History of the Decline and Fall of the Roman Empire*, (1832), those processes, apparently all following the same series of steps, have haunted the minds of all serious historians and are ever present in the anxieties of forecasters. Therefore, paradigms appear in historical sciences, too. (Földvári, 2022) Through the glasses of the paradigm theory, it appears more clear the position of the King and the Grand Duke of Lithuania in the 16<sup>th</sup> c. was already much different than the position of an almighty ruler in Moscow.

#### **4. CONFSSIONALIZATION**

##### **4.1. The Sense of Confessionnalization and Its Appearance in the Byzantine-Rite Christianity in the Polish-Lithuanian Commonwealth**

Here took place the real “confessionnalization”, and it took place only here, but never on the Muscovian lands. (Földvári, 2023)



The ground of the confessionalization was the system of institutions, the institutionalization (Dmitriev, 2012:137). Thus, it is possible to speak about the confessionalization there, where the autonomy of the civil religious institutions existed, about which one can speak in the Polish-Lithuanian Commonwealth, but to a much lesser extent in the tsarist Russia. Also, the religious polemic is necessary to shape the dogmas in the controversies — it took place up to the bloody stage, as the controversies between the Uniates and Orthodoxies led to the martyrdom (Hoinackij, 1882; Kiprianovič, 2006). Also, the impact of the must increase and decrease, too (depending on what may provide the building of institutions of the religious culture) – the increase was reflected in the providing the union by the king of Poland (providing the institutions of the Uniates; at the same time, the role of the state was decreasing, too, by the activity of civil religious organizations, i.e., the brotherhoods, whose activity led to the spreading of the independent, thus to civil to some extent, institutions of the religious culture (Dmitruk 2015; Mironowicz, 2003).

The Orthodox confraternities (the Ukrainian brotherhoods) and the Uniate Basilians, too, did much in the field of development along the European way, mainly in the field of printing and educational culture (Isaievych, 1990; 1996; 2006; Isaievič, 1962; Isaievych, 1966). This process is called “confessionalization”, that is, the construction of institutions, the formation of dogmas, and the development of personal views and consciousness of citizens in the mass measure. And this did not happen on Russian lands, therefore, the European “citoyen”-culture in Ukraine has a five-hundred-year history —as well on all the lands of the Polish-Lithuanian Commonwealth, albeit on any Russian lands it could not have happened at that time (Dmitriev, 1997:26-28; 2003; 2012; Brüning, 2008; 2008a; Moritz et al. 2001).

As it has proved by academician Isaievych, the impacts of the Polish baroque are much reflected in the books, printed on the Ukrainian lands, especially in the prefaces and afterwords, also in the ornamental elements, engravings, headers, and footers (Isaievych, 1990; 1992). Thus, in texts and ornaments, too. The level of production was here much higher than in Muscovy – as even some Russian historians-academics are of this opinion (Sidorov, 1976: 5). As a result of the brotherhoods worked for the market and as a consequence of their small size – they easy and quickly reacted for the expectations of the market (in comparison with the huge “Printing House” in Moscow, the enormous “Pečatnyj dvor”); even more, the confraternal printing shops were not only able but also likely to work for the market (while the giant behemoth in Moscow was working on the orders of the Tsar) — in this, we can see the phenomena of the “confessionalization”, too. (For the evolving of the brotherhoods: Mironowicz, 1996.)

On the Ukrainian lands, already in the 16 c. a local elite of Old-Ukrainian language had unfolded, to some extent, which was of Ukrainian-consciousness, anti-Polish, Orthodox gentry, in contrary to the Polish



Catholic gentry, and this elite provided the building of Ukrainian identity, providing the book-printing, playing role in the early development of the Ukrainian language, and shaping the national consciousness. (Lytvynov, 2012.) The full translation of the Bible (apart from the early editions that were partially translated) was a result of the processes of “confessionalization”: on the orthodox Ukrainian lands, by the activity of the orthodox bourgeoisie, together with the noble local elite, was translated and printed the whole Bible in Ostrih, 1581 (Isaievych, 1975; 1990; Kryp’iakevych, 1924; Boiko, 1980; 1981).

#### **4.2. Confessionalization in the Activity of the Orthodox Brotherhoods**

The next point is the mostly mentioned role of brotherhoods thus confraternities in the bourgeois development of the East Slavic territories of the Commonwealth. Even some theorists maintain the church union, thus the integration of the orthodox clergy into the Roman Catholic hierarchy occurred as a reaction of the clergy for the independence of the brotherhoods, which did not accept any supremacy of the bishops but gained the “Stauropegy” from the Patriarch of Constantinople, which meant they were subordinated only under the Patriarch, who chaired at a much far distance and under the Ottoman Turkish rule. (Tymošenko, 2007.)

Therefore, the activity of confraternities meant that civic development took place, and their schools and printing houses proved the institutionalization of the religious culture and managing it by civic hands which meant the birth of the dawn of national cultures in the Early Modern Age, according to Anderson, 1991, and in our view, those processes and phenomena were bond by Aronson to the unfolding of the Protestantism and the book-printing, could and must be bounded also to the Orthodoxy in those regions where the Orthodoxy played the role of Western Protestantism. (Földvári, 2021.) In this approach, the strives between the church hierarchy as hegemons and the civic confraternities as the society the former wanted to subordinate, proves a bright case of the problems of hegemons in the church and society, and the union with Rome meant a retrograde step toward the maintaining the feudal hierarchy, according to aforementioned Leonid Tymoshenko. However, the Church Union resulted from a more complex situation, and the Uniate printing houses, which were managed by the Basilian monks, gave a significant contribution to Confessionalization, thus Europeanization, and the economic development toward capitalization, too, by the role of books in the trade and economy in general. (Földvári, 2021, 2022; 2023)

The earliest founded brotherhood, also the best-researched, too, was the Stauropegian Confraternity in Lviv (Polish Lemberg), 1586. I gained the rank of “stauropegy” from the Patriarch of Constantinople, which meant this institution was independent of the local control of the episcopal hierarchy but depended on the Patriarch only, for religious matters (Tymošenko, 2006-07). It is worth to mention this phenomenon belongs to the confessionalization, namely, to institutionalization, for it means the minimalization of the ideological and

administrative control with a local autonomy, economical-cultural activities such as book-printing, education, and seeking toward the subsidiarity (Isaievič, 1962; Koliada, 1952; Krylovskij, 1904). Its economic activity has already been well-researched (Šustova, 2009). It is to be highlighted, as for the role of the Lviv Stauropegian Brotherhood in the confessionalization, its books were not only purchased by the Serbian, Greek, and other guests from the far lands but also presented them as gifts; moreover, this Lviv Stauropegian Confraternity gave books as gifts to the poor Carpathian Uniate (i.e., Greek Catholic) Rusyn-Ukrainians, by which it was proved the Orthodox Brotherhood looked the poor neighbors first of all for closest Slavic brothers but only secondary for followers of another, strange confession (Isaievič, 1966: 188). Actually, in the then-Hungarian Kingdom, no printing house was equipped with Cyrillic letters yet in the 16-17 cc. (Gavlirović, 1974), hence the Serbs and Carpathian Ukrainian-Rusyns imported their liturgical service books from the Ukrainian typographies (Földvári, 2014).

The confraternity of Vilna was the second in chronological order, and also of the second greatest significance among the orthodox brotherhoods (Isaievič, 1966a; Berezenko, 2016). It had close contact with the Ukrainian lands. The boards for the engravings of title pages were moved from Ostrih to Vilna, on the other hand, in the 17th c. the engravers in Vilna educated those in Kyiv, on how to do the engraving (Zapasko, 1971). While Ivan Fjodoroff was expelled from Moscow (Ziornova, 1947; Nemirovskij, 1964), after he had begun his activity in Zabludov, Poland, printing the “Teaching Gospel” (Jaroszewicz-Pieresławcew, 2003: 39-46), then he printed in Moscow an Apostle, added a famous afterword as a literary text (Diomin, 1971); after all, he went to Lviv, and then he translated and published the whole Bible in Ostrih, 1581 — as a brilliant record of the role played by the local elite in the confessionalization, about which it has recently spoken (Isaievič, 1990).

The following foundations of brotherhoods took place in Lutsk (Pavlyčko, 1995; Boiko, 1972), Kyiv (Kagamlyk, 1999; Titov, 1918; for the schooling: Ničuk, 1982), Tshernigiff (Debrovskij, 1928; Kameneva, 1959), and other places to a smaller extent as well; and these brotherhoods managed schools and book-printing on all the places they were founded (Mironowicz, 2003).

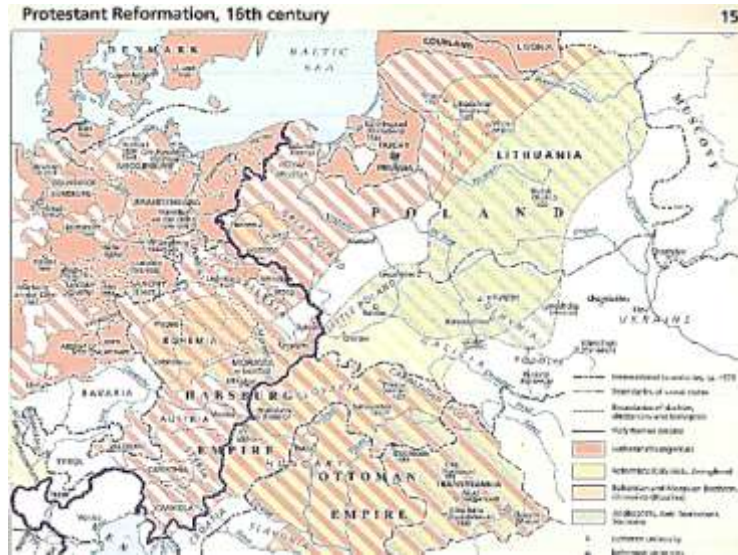
The schooling in the spirit of “national consciousness”, in the lion’s share, was maintained of merit of these brotherhoods: that learned elite, which learned the literacy in the “Prosta mova” [“Common language”], and elaborated the ancestor of the modern Ukrainian language – acquired in the schools of these brotherhoods the writing and elementary knowledge of the civil culture of that time. (Medynskyj, 1958). It has already been proved by a rich literature in the field, that the role played by these brotherhoods was like that of the Reformation, and their activity evidenced the processes of the confessionalization. (Isaievych, 1990; Gumanystyčni... 1990; Kaganov, 1959).

### 4.3. Confessionalization in the Church Union.

Confessionalization meant institutionalization. The Catholic printing houses -as institutions- also took a significant part in the confessionalization as for the role played by the Uniate church. It was already emphasized in our previous paper, those Greek Catholic monasteries, which managed printing shops, too, worked for the market, being market-oriented, and flexible, such as the orthodox confraternities' typographies (Földvári, 2020: 231-32). The Greek Catholic typographies were owned and managed by the Basilian Order (Vavryk, 1974). It is to be mentioned the typographies in Suprasl', Pochaiv, and Univ, apart from some small ones. In Suprasl', the largest and of the most significance on the territory of the Polish-Lithuanian Commonwealth, Cyrillic books were issued so for the Uniates (Labyncev, 1979; 1981) as for the Russian Old believers (Labyncev, 1978), and printed also books with Latin letters, for Classical Latin texts, also for the flourishing Neolatin Literature in the Commonwealth and Polish books as well (Cubrzyńska-Leonarczyk 1996). The processes of confessionalization were reflected in such phenomena, as the language of the Cyrillic books, that is, of those printed for the polemical literature but not for the liturgical service, was getting near and nearer to the spoken language (Getka, 2019), and the former orthodox texts in the liturgical books of Byzantine confession, printed for the Uniate church, were corrected and improved for the Catholic usage (Vavryk, 1985), also it is to be taken into consideration the trade of books, covering remote areas as well (Földvári, 2019) — all these were the phenomena of the confessionalization (Földvári, 2020; 2021).

Then, it is worthy to mention the Uniate printing shop in Pochaiv, which took the place of Suprasl' in the book trade. In those times, for one and half of a century, the Pochaiv Lavra belonged to the Uniates, that is, Greek Catholics, thus it was a monastery and a cultural center of the Basilian Order (Kraljuk, 2021), and thanks to its geographical position, it could better satisfy the needs for book-printing of the Byzantine Catholics (Petrušević, 1863; Ščurovskij, 1895; Kyseliiov, 2006; Getka, 2007). Beyond its books, it distributed the books of the Suprasl' typography, too, thus books from various Basilian typographies were spread by the Pochaiv Basilian Lavra. (Földvári, 2021; 2024a)

The processes of confessionalization were reflected in the analogical way in the case of a small but significant typography in Univ. It entered into debates with the bishop, thus it stood out for its interests (reflecting a phenomenon of the institutionalization), and it managed the high-quality book-printing, since the books from the Univ represented high-quality typographical techniques and contents, too, such as the famous uniate Suprasl' Sluzhebnik 1696 which was reprinted in Univ, 1741, with that engraved title page and header/footer engravings, too, which were perfect imitations of the original in Suprasl' but without the heart of Jesus (Vydašenko, 1976; Pidkivka, 2000).



**4. Figure The Reformation in Eastern Europe: the Grand Duchy of Lithuania was the terrain of a strong Reformation in the 16<sup>th</sup> c. Source: Magocsi, 1991.**

#### **4.4. The Question of the Reformation**

Reformation spread among those territories were the republic of gentry, therefore, the citizen-mentality of Protestantism was still added to the republican spirit. (Gumanistychni... 1990). Such territories were those that are called Belarusian and Lithuanian lands, nowadays these lands were the main territories of the Reformation, and they spread from there to the South. (Packajeŭ, 2002.) Although these lands were called “Lithuanian” lands, it was understood in a broad sense, referring to the Grand Duchy of Lithuania, thus not only the present Lithuania in a narrow sense. Moreover, a significant peculiarity of the Polish-Lithuanian Protestantism was the tolerance (Tazbir, 1996). Hence on those lands, where nowadays Lukashenka bloody beats the protesters against his rule, there in the Early Modern Age, at the dawn of modern civilization, the Reformation and tolerance spread, and the king was elected. On the contrary, in the authoritarian Russian Muscovy, there did not take place any kind of Reformation. Although a significant fracturing in the Russian church took place, that is the Old Believers’ movement, it could not evaluated as any ‘Reformation’ but a sectarian movement. The almighty tsar had unlimited power, to whom all the boyars were subordinated (Uspenskii & Zhivov, 1996).

### **5. DISCUSSION & CONCLUSIONS**

#### **5.1. Development of the Civil Society Allowed the Burghers to Build National-Confessional Identity**

The orthodox confraternities (brotherhoods) of laymen were social (thus not clerical) institutions of the orthodox confessionalization; while the monastic uniate printing houses (Suprasł, Pochaiv, Univ) worked as

social institutions in processes of the Greek-Catholic (i.e. Uniate) confessionalization, therefore, they were not only simple church institutions -although were integrated into the church as monasteries- but also manifestations of the confessionalization, though closely depending on the church without such a (relative) freedom the orthodox lay brotherhood enjoyed. We assess institutionalization as the most important among the phenomena of confessionalization (Moritz et al. 2001; Дмитриев, 2012). Albeit it never was possible within the frameworks of centralized Tsarist Russia (any institutionalization imposed from above is not enough, nor a limited civil culture, or the “parody of development”, thus ordered-by-the tsar development, are not enough) — while the republic of the noblemen of the Polish-Lithuanian Rzeczpospolitya, its significantly “civilized” state (in the sense of the civil society), with its European circumstances, allowed the real confessionalization: the Rzeczpospolitya not only made possible but also provided the shaping of institutions of confessionalization, therefore, it urged the evolving of bourgeois culture on the local, own ground; while to Russia it was necessary to bring as “a borrowing”. Hence on the Ukrainian lands, which had been heirs of the “Lithuanian Ruś” -together with the Belarusian lands- the European bourgeois culture was a phenomenon of the inner, local tradition.

In the western part of the Orthodox world, i.e. in the Polish-Lithuanian state, in the 16<sup>th</sup> and 17<sup>th</sup> centuries, secular NGOs (confraternities: brotherhoods) maintained the schools and book-printing. This era is what we call the “confessionalization”. The confessionalization paradigm is more precise than the “pre-modernization” because the latter does not emphasize the fact that the era of Reformation did not start with a rational, liberal society. The concept of confessionalization means religious discourses, the development of specially confessionalised institutional systems, and private religiosity. Examples of book publishing show that confessionalisation took place in the western side of Slavia Orthodoxa, in the Polish-Lithuanian state. In this territory, elementary education and printing were managed by lay associations, under the control of civil capital; these confraternities of laymen published liturgical books following the principles of market-oriented publishing. Hence, in the Commonwealth, the socio-political and economic development was enough to cultivate the soil for Confessionalisation, and “the market of ideas” as in the Protestantism in the West. (Anderson, 1991) No confessionalization happened in Muscovy but in the Polish-Lithuanian State. Similar processes to those that took place in the West under the umbrella of Protestantism, took place in Orthodoxy, too, if regarding the western part of the Orthodoxy, within the framework of the Commonwealth.



## 5.2. The Confessionalization Paradigm is Adequate and Optimal for Describing the Phenomena in the Time of the Question

To study early modernism, the use of ‘confessionalisation’ as a paradigm is essential in Eastern Europe's cultural history, too. In the western part of the Orthodox world, i.e. in the Polish-Lithuanian state, in today's Ukraine and Belarus, in the 16<sup>th</sup> and 17<sup>th</sup> centuries, secular NGOs (confraternities: brotherhoods) maintained the schools and book-printing. The church no longer ruled the souls of individuals, but on the contrary, the citizens themselves ruled the church. Although such processes have been completed since the age of real modernism, in particular since the French “Enlightenment” in the 18<sup>th</sup> century (Siècle de Lumiere), when the world was expanding, due to the knowledge of different cultures, as a result of the description of geographically distant territories and their peoples, and the flowering of Natural Sciences.

This is particularly evidenced in a significant permanent exhibition of the British Museum in London, called “Enlightenment”. Many book series, “encyclopedias”, show on this exhibition in London that the flowering of individuality, the birth of civil culture, and the emergence of liberalism, was the “enlightenment” that is, the very “modernism” – but the epoch which is the subject of our paper, the Age of Reformation in Europe, was something else. It is not even modernism, but already the era of citizenship. This is what we call the “confessionalization”. (Földvári, 2023)

The confessionalization paradigm is more precise than the “pre-modernization”, a paradigm of pre-modernism because the latter does not emphasize the fact that the era of Reformation did not start with a rational, modern, liberal society. The concept of confessionalization means the religious discourses the development of a specially confessionalised institutional system and the emergence of individual (private) religiosity. Earlier this paradigm appeared in the Catholic and Protestant church history; then there were widespread discussions about whether it could be used in the Orthodox, Eastern European cultural history. In a one-track-mind approach, if we were to roughly identify Slavic Orthodoxy with the authority of Tsarist despotic society, the answer would be “not”. But the examples of book-publishing and education, show that confessionalisation took place in the western side of Slavia Orthodoxa, in the Polish-Lithuanian state. In this territory, elementary education and printing were managed by civil, lay associations, i.e. in the maintenance and under the control of civil capital; and these confraternities of laymen published liturgical books following the principles of market-oriented publishing – as it has already been emphasized above. On the other hand, there was only one gigantic printing house in Moscow, with the centralized, bureaucratic management of the emperor, which was neither receptive nor suitable for cultural innovations. The socio-economic fund: the

monopoly of the state and church hierarchy in Moscow, and private patronage in Ukraine, are significantly different.



**5. Figure The British Museum, "Enlightenment" permanent exhibition. (Photo: Author – S.F.)**

### **5.3. In Conclusion: the European Society and Culture Have Their Roots in the Ukrainian lands.**

The development of the bourgeois, civil culture went to a significant extent in circumstances of the constitutional monarchy – albeit it was hardly possible in the Russian authoritarian state. While Peter the Great took the example from the bourgeois culture of Europe, on the contrary, those lands were heirs of the “Lithuanian Ruś”, the European culture already had been evolving as a result of the local traditions, thus of the own cultural heritage. For instance, the printing shops of the brotherhoods (confraternities) were phenomena of the bourgeois society. These processes are called for “confessionalization” in the historiography, which took place on the Ukrainian, Polish, and Lithuanian (in the broad sense: “Litvin”) lands but could not take place on the Russian lands. Consequently, the European bourgeois society has its roots in the Ukrainian lands, albeit for the Russians it is a strange, foreign phenomenon: Russians may learn the European culture from Ukrainians. Russians may be pupils of Ukrainians, concerning the master.

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**UKRAYNA'YA GELİNCE NEDEN POLONYA'YI MACARİSTAN'A TERCİH ETMELİSİNİZ  
WHY PREFER POLAND TO HUNGARY AS FOR UKRAINE:**

**FÖLDVÁRI, Sándor**

**ORCID: 0000-0002-7825-0531**

**alexfoldvari@gmail.com**

**Debrecen Üniversitesi, Beşeri Bilimler Fakültesi, Debrecen; Macaristan  
Araştırma Bilim Adamı (Kıdemli Araştırmacı) ve Litvanya Dili Profesör**

**ÖZET**

Ukrayna çok harap olmasına rağmen, savaştan sonra yeni yatırımlar ve yeni yatırımcılar gelecek. Güvenliğin asıl görevi Macaristan'ı bu konudan dışlamak olacaktır. Hungary is suffering under a populist diktator, Orbán. Polonya siyasi yolunu değiştirirken ve şimdi açık bir toplum ve Batı demokrasisi inşa ediyor. Özgürlük Evi ve diğer bilimsel kurumlara (Bertelsmann Stiftung ve İsveç'teki V-Dem) göre Macaristan zaten bir demokrasi değil. Macaristan'da Rus gizli servisleri faaliyet gösteriyor ve ortalama insanların görüş ve görüşlerini etkiliyorlar. Polonya'nın, Avrupa'yı Asya saldırılarından korumak için Ukrayna'da büyük bir misyonu var. Asya imparatorluklarının ajanlarından olduğu gibi, Avrupa'yı da savunmaktır, mevcut Macar rejimi böyle bir ajan olduğu için. Bu nedenle, Polonya'nın önderliğinde Doğu-Orta Avrupa'nın iki görevi vardır: Rusya'yı durdurmak ve Rusya'nın küçük kardeşi Macar otoriter lider Orbán'ı durdurmak için, Avrupa Birliği ve Nato'da Putin'in Truva atı kimdir. Putin'i durdurun ve insanlığın güvenliği için Orban'ı da durdurun.

**Anahtar Kelimeler:** Ukrayna, Polonya, Macaristan, Rusya, Avrupa.

## WHY PREFER POLAND TO HUNGARY AS FOR UKRAINE UKRAYNA'YA GELİNCE NEDEN POLONYA'YI MACARİSTAN'A TERCİH ETMELİSİNİZ

**FÖLDVÁRI, Sándor**

**ORCID: 0000-0002-7825-0531**

**alexfoldvari@gmail.com**

**Debrecen University, Faculty of Humanities, Baltic Studies, Debrecen; Hungary**

**Research Scholar (Senior Researcher) and Lecturer of Lithuanian Language**

### ABSTRACT

Three huge oil and gas fields are located in Ukraine: in Donbas, and around Crimea, also in West Ukraine, near the Polish border. (Földvári, 2022) These were already begun to be exploited by the famous company Shell in 2013. Albeit in 2014 Russia appeared on the same territories, where the fields of oil and gas are located. Hence Crimea is important not only as a strategic place because of the marital military basis, but also in the economic aspect. (Földvári, 2024a) The western field of oil and gas is located at the border next to Poland, along Lviv, under the Transcarpathia, up to the Romanian territories. Russia cannot access it, because the huge and strong Poland resists Russian expansion. But Hungary is located next to the West Ukrainian oil and gas field, too. Hence, across Hungary, Putin may access the Western rich natural resources of Ukraine. Russia does not want to exploit these oil and gas fields but to destroy them. Because Russia has no technology nor know-how to exploit shale gas and shale oil. The cruel war with terrible war crimes (such as the torture of war prisoners and beheading them, as the deportation of children, to Russia and Siberia) began with the purpose of destroying Ukraine and making it impossible to exist as a normal state.

However, new investments and new investors will come after the war. The main task of safety will be to exclude Hungary from this matter. Hungary is suffering under a populist dictator, Orbán. While Poland changed its political way and now has been building an open society and Western democracy. Hungarian Orbán regime is different even from the previous Polish conservative, right-party system. Poland remained a parliamentary democracy even in the past right-wing regime, while Hungary is already not a democracy, according to the Freedom House and other scientific institutions (Bertelsmann Stiftung, and V-Dem in Sweden).

Well-known, the Russian secret services work much in Hungary, and they influence the views and opinions of average people. The people's views and moods, it is also a great military potential. Poland has a great mission in West Ukraine, to defend Europe from Asian attacks and their agent as the recent Hungarian regime. Therefore,

East-Central Europe, under the leadership of Poland, has two tasks: to stop Russia and to stop the small brother of Russia, the Hungarian authoritarian leader Orbán, who is the Trojan horse of Putin in the European Union and NATO. Stop Putin and stop Orbán, too, for the safety of humankind.

**Keywords:** Ukraine, Poland, Hungary, Russia, Europe.

### 1. INTRODUCTION: THE GEOPOLITICAL AND GEOGRAPHIC ASPECTS OF THE TOPIC.

Let us look at this problem from the point of view of the economy. Please pay attention, there are huge oil and gas fields in Ukraine, in Donbas, and around Crimea, also in West Ukraine, near the Polish border. (Földvári, 2022; 2024a) These were already begun to be exploited by the famous company Shell in 2013. Albeit in 2014 Russia appeared on the same territories, where the fields of oil and gas are located. (Pratten, 2021) Hence Crimea is important not only as a strategic place because of the marital military basis, but also in the economic aspect. A huge gas field is located under the sea, around Crimea. Thus, Russian aggression has attacked the very areas where oil and gas are available: Crimea and the Donbas. The third oil- and gas field is located under Transcarpathia, extending into Romania and it extends towards Lviv and Ternopil, too. This territory must be exploited by Polish firms, with Polish and American capital.



1. Figure. Ukraine's oil and gas resources pre-conflict (Source: The Energy Consulting Group)

Let us pay attention, Russia does not want to gain these oil and gas fields but to destroy them. The cruel war with terrible war crimes (such as the torture of war prisoners and beheading them, as the deportation of children, to Russia and Siberia) — began not for gain oil and gas in Ukraine, but also to destroy Ukraine and make it impossible to exist as a normal state and make it impossible for the Ukrainian nation to exit as human beings. As the Serbian proverb says: “Let the neighbor's cow die because I have no cow”. Thus, “let Ukraine die because it is not Russia” – says the latest Muscovian Tsar.

Sure, new investments and new investors will come after the war. Be careful and exclude Hungary from this matter. The western field of oil and gas is located at the border next to Poland, along Lviv. Hence, Russia cannot access it, because the huge and strong Poland resists Russian expansion, and Poland is able to defend Europe in the military aspect, too. But Hungary is located next to the West Ukrainian oil and gas field, too.

## **2. HUNGARY IS A RISK DUE TO ITS AUTHORITARIAN REGİME AND RUSSOPHİL, PUTİN-FRIENDLY POLİCY, TOO.**

### **2.1. Hungary is Already Not a Democracy, According to Three Scientific Institutions.**

Hungary is suffering under a populist dictator, Orbán. He is much more different from the Polish conservative, right-party system. Poland has often been criticized by the European Union, albeit Poland has good relations with the United States, while Hungary has more and more colder relations to America. Thus, what makes Hungary much riskier than Poland? First, Poland is still a parliamentary democracy, while Hungary is already not a democracy, according to the Freedom House and others: “In Hungary, Prime Minister Viktor Orbán has presided over one of the most dramatic declines ever charted by Freedom House within the European Union. Having worked methodically to deny critical voices a platform in the media or civil society, Orbán and his right-wing nationalist Fidesz party easily defended their parliamentary supermajority in the 2018 elections. Soon after, the government forced the closure of Central European University, evicting its vibrant academic community.” (Freedom, 2019: 11.)

Also, the Hungarian secret services have been misused, not for the security of the country. The ruling gang, the Fidesz party uses its secrete services for observing the opponent politicians (Tharoor 2021), and journalists, too, and all those have been suspicious in the eyes of the ruling elite (Birnbaum, Petho and Chastand, 2021), therefore, the Orbán-regime has already been really such a dictatorship which has forcibly ruled by such means as Hitler and Stalin ruled.

### **2.2. Hungary is a Terrain of Russian Secret Agencies.**

Then, the sad “result” of the black operation by the pro-Russian propaganda in Hungary. (Földvári, 2024)

Therefore, although the previous Polish system was conservative, this was one of the significant differences between Poland's and Hungarian right-side policies: Polish state never had been friendly to Russia, but Hungary was and has been a hidden agent of Russia. Well-known, the Russian secret services work much in Hungary, and they influence the views and opinions of average people. The people's views and moods, it is also a great military potential. No wonder The United States of America introduced sanctions against Hungary

because of the activity of the Russian spy bank, the Sberbank, and because the Hungarian government provided suspicious Russian oligarchs – the wonder is, why the USA acted so late. (Morris, L. 2023)



2. Figure. Putin's “smaller dog” Orbán (photo: mass media)

A former Hungarian secret service expert, who now lives abroad, but did not say where he lives, gave an exclusive interview already five years ago (thus the Russian intervention has already been ongoing for many years). He took his name and face: Ferenc Katrein, who worked for the Hungarian counterintelligence for 13 years, including as director of operations. The interview has been published as well in Hungarian and in an English version, too. (Panyi, 2017, 2017a) The statements, most relevant to our topic, are as follows. Russian services feel free to push in Hungary. Public media broadcasts Kremlin propaganda. He feels that the political attitude towards Russia changed and that the services were obstructed on the political level. A Secret Service offensive is taking place against the European Union, and part of it is the influence operations in which the Russians have serious knowledge and traditions. Russia is involved in deepening the migrant crisis and, above all, in using it for propaganda and influence.

According to the Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation (INGE), the Russian threat has increased in information warfare and any field of security. This committee conducted investigations on foreign interference in all democratic processes in the European Union, including disinformation. The report has been conducted by the former Latvian Ministry of Foreign Affairs, Sandra Kalnietē, now MP of EU, in the Group of European People's Party (Christian Democrats), and of special committees, such as the Committee on Foreign Affairs (AFET) and, which is even more relevant to us, of the Delegation to the EU-Ukraine Parliamentary Association Committee (D-UA) which has a prominent member, Hungarian EP member Klára Dobrev, as well. (Expat, 2022) For eighteen months, the INGE committee of the European Parliament collected data on foreign (mainly Russian) attempts to influence the EU's democratic processes and create discord between member states. The report contains clear evidence that Russia and China are using countless tools to manipulate European public opinion, often successfully. (Kalniete, 2021)



Already in the Eve of the War, Hungarian Foreign Minister Péter Szijjártó received the Russian Order of Friendship from Sergei Lavrov, his Russian counterpart, in Moscow on Thursday, “for his work on developing Hungarian-Russian ties”. (MTI-Hungary Today, 2021)



3. Figure Russian FM Sergei Lavrov pinned himself the great Russian award on Hungarian FM Péter Szijjártó's coat

### **2.3. Hungarian Leader Orbán is a Friend of the Belarusian Dictator Lukashenka.**

We raised this question in connection with the visit paid by Hungarian Prime Orbán to the Belarusian dictator Lukashenka in 2020 when that cheating crook rigged the Belarusian elections, and all civilized states of the world refused to recognize that person for a president, but Hungary. We paid attention to the joint military exercise in Belarus with the participation of the Russian, Serbian, and Belarusian armies, and anticipated already the cooperation of these dictatorial states a long time before the cruel war against Ukraine. (Földvári, 2021) An alliance unfolded among the dictators: Serbian soldiers took part in the Belarusian events, as evidenced by the photos of a Belarusian journalist. This was also published in the Hungarian press by the opponents, which is due to the interest of our liberal opponents in the Belarusian events, too. (Jabronka, 2020) Let's recall it, for it proves that Hungarian Prime Orbán had already been an ally to these dictators much earlier than the Ukrainian war began, thus his commitment was and has been a permanent and clear line. (Földvári, 2021)

Just as the European Union previously condemned Hungarian leader Viktor Orbán in June 2020, for his authoritarian misuse of the pandemic for introducing the ruling through governmental decrees by eliminating the rule of the parliament, and for the regulation of the democratic system in many aspects, he paid an official visit to the Serbian authoritarian leader, undoubtedly as a meeting of the pro-Russian dictators, according to the former advisor of the EU, professor of the CEU, Péter Balázs (Bolgár, 2020); then he paid a visit to the



Belarusian leader Lukashenka. Although against this visit the strongest Hungarian party of opponents, that is, the Democratic Coalition (whose support is now 21% among potential voters, according to the independent, liberal Public Opinion Research Institute: Republikon, 2023) protested and stated that our Orbán opposed the European Union. (Ara-Kovács, 2020) It is also important that after the elections in Belarus, when the tragic events began there, then in Hungary, this Democratic Coalition requested in our parliament the Hungarian authorities to make a judgment about Lukashenka's cruel behavior, although so far without results. (DK Press-Office 2020) But nothing was written about it in the “official” press of the Hungarian government. Moreover, Orbán’s behaviour showed at that time his close commitment to the “Muscovian Tsar”, as he protested against the European sanctions against Russia and Belarus in 2020, as he was the unique leader among the countries of the European Union, who provided Putin and Lukashenka by his political commitment. (Baczynska & Chalmers, 2020)



4. Figure The Belarusian Dictator A. Lukashenka donated a football-t-shirt to his Hungarian colleague V. Orbán

Thus, no wonder, his behavior appeared more than ambiguous also later, in the time of the Russian aggression against Ukraine in 2022. Noteworthy: it must not be a true argumentation by the Hungarian authoritarian Prime nowadays, that Hungary must consider its “dependence” on the Russian energy carriers and this would be the cause of his critics of the European sanctions against Russia — since he had already demonstrated his commitment to Lukashenka, much earlier than the Russian invasion came to Ukraine; however, Hungary does not depend on some Belarusian “energy carriers” because nothing valuable product comes from Belarus, we do not “depend” on Belarus at all, albeit Orbán already expressed his close commitment to Lukashenka and Putin in 2020 when all civilized states refused the diplomatic recognition that Belarusian dictator but Orbán; then it was clear what can be expected from such a person in the terrible aggression of Russia against Ukraine. The author of this paper paid attention to the dangerous consequences that were expected from this commitment between Orbán and Lukashenka, already before the war. (Földvári

[Фйольдварі], 2020с) Hence, no wonder the Russian secret services have already been working in Hungary for a long time and more and more intensively.

### **3. HUNGARY IS A RISK TO SECURITY DUE TO ITS NATIONALIST POLİCY**

#### **3.1. The Previous Conservative Nationalist Regime Was in Friendly Diplomatic Relations With Ukraine – Buts Orbán Is Not.**

Lately, during the decade of the last “nationalist” regime, average Hungarians dislike Ukrainians mostly among all the neighbors, according to a statistical survey about the evaluation of neighbors by the Hungarian inhabitants. This survey was made by a government-supported institute for public opinion in 2019, thus a year before the war, and after that time they did not return to this question. Ukraine was treated asymmetrically: while all neighbors were included in a double-side way, that is, the opinion of Hungarians about the neighbors and the opinion of neighbors about Hungarians were included, in the case of Ukraine the opinion of Ukrainians about Hungarians was omitted and only the Hungarians’ view about Ukrainians was included. (Nézöpont Intézet – Viewpoint Institute, 2019)

However, the current political problems must be solved by the diplomatic and empathic approach, instead of the conflict-sharpening, as the former ministry of foreign affairs, Géza Jeszenszky, former professor of diplomatic sciences in the USA, wrote in his essays for the moderate conflict-managing. He completed “The Basic Treaty on Foundations of Neighbourhood and Cooperation” which was signed on December 6, 1991, and came into force on June 16, 1993, in Hungary (Law of 1995:45), though in Ukraine it was ratified already December 01, 1992 (Dogovir, 2012) as he overlooked these processes in a research paper with a rich matter of memories. (Jeszenszky, 2007) Noteworthy, the ratification of this bilateral contract was delayed in Hungary for one and half years, and then-Minister of Foreign Affairs Géza Jeszenszky argued in the Parliament of Hungary that the neighborhood had been excellent for that one and half years and it was already the time to accept it by the Members of the Parliament. (Jeszenszky, 1993)

Jeszenszky is already not an accepted person for the recent Orbán regime, and he is already a rejected person. Although he is of “Beyond-Borders” origin, thus from those Hungarians who live in Slovakia, moreover, he is a religious Lutheran person (thus protestant Christian), and, he is a great patriot, thus a very nationalist conservative Hungarian – but he is a rejected person and he is not accepted by the Orbán-regime, because the Orbán-regime needs servants to humiliate but not intelligent people. The Hungarian political regime is not a religious, or conservative, nor a national regime – because it excludes those excellent personalities, who are conservative, religious, and nationalist persons, but not the members of the ruling mafia. Professor Jeszenszky was a recognized scholar of diplomacy in the United States, an excellent minister of foreign affairs,

and also a right-side conservative, nationalist patriot – albeit such a real Hungarian is already not an accepted person for the Orbán-regime.

Hence the Orbán regime is not a real conservative, right-side, Christian, or nationalist regime, but a mafia. This is a significant difference between the previous Polish conservative, religious political system, and the Hungarian ruling mafia-type regime. Hungarian sociologist Bálint Magyar, former Minister of Education, and liberal politician said: “It should be made clear that Hungary does not have a government, but a criminal organization led by Viktor Orbán.” (Magyar, 2021) It is worth comparing the earlier Minister of Foreign Affairs, Prof. Géza Jeszenszky, a recognized scholar, the friend of Ukraine, with the recent Minister of Foreign Affairs, Péter Szijártó, as his humble and servile negotiations with the Russian Sergey Lavrov are officially documented in the internet: (Szijártó-Lavrov, 2021)

### **3.2. The Irredenta Manipulative Tactics of the Orbán-Regime.**

Prime Orbán provided a far-right speaker on 23 October 2018 in Budapest, at a high-rank state ceremony on the anniversary of the Hungarian revolution in 1956 against the Soviet Communist regime, and in this speech, it was said that Hungary does not consider the Ukrainian-Hungarian treaty is valid anymore. Orbán then declared: he is ready to “accept” territories from Ukraine, which are inhabited by Hungarians. (Grabowszki, 2018)

The danger of the Hungarian ruling right wing was even more visible in the words of an ultra-nationalist historian, the ideologist of the recent elite, dr. Ernő Raffay, has already published more than two dozen books against freemasonry, the Jews, the neighboring peoples, and supporting right-wing irredent attempts of Hungary to “recover” the former “Great Hungary” and thus accept from the hands of Putin the territory of Transcarpathia – albeit it must remain in the framework of the gossip, and never officially by the state, but in an indirect way. This irredenta historian, somehow-professor Raffay, said in an interview made by him in 2018, that Transylvania must not remain a part of Romania, but it must be occupied by armed forces and the support of some “great power”. Let us quote the most dangerous parts of his interview (Pataki, 2018):

Question: - Academician Ignác Romsics last week in a newspaper interview said that... the plan of a far-reaching European confederation will solve the situation of Transylvania. Do you agree with the suggestion?

Raffay: this is an unprincipled phrase... Romsics is the spiritual heir of some old Marxist and liberal historians who have no principles or ideals.

Who is that academician Romsics, whom this Raffay underestimate so rude? He is a very well-recognized classical scholar, who did not belong to the lately dominating right-wing elite of the authoritarian Orbán regime in Hungary. He has published a bestseller book about the Trianon Treaty which has been

translated into Slovak, Czech, English, German, and Polish, as well. It is a reliable reference, written by a classical scholar of the 20<sup>th</sup> century. (Romsics, 2002; 2005; 2009)

Let us return to this Hungarian revisionist, irredent, far-right person, because it concerns Carpathian Ukraine, too. That Raffay declared: “I think that national politics must take a new path: and this third path is the path of territorial revision and border modification. Between 1938 and 1941, the border was modified four times in our favour, which was done with the help of the great powers of the time. This is the task now: to convince one or another great power for the sake of our cause. We need smart Hungarian diplomacy, supported by a strong army and a cohesive nation” (translated by me, S.F.; in Hungarian origin: “Szerintem új útra kell lépnie a nemzetpolitikának: s e harmadik út a területi revízió, a határmódosítás útja. 1938 és 1941 között négyszer módosították javunkra a határt, ami a korabeli nagyhatalmak segítségével történt. Most is ez a feladat: megnyerni egyik vagy másik nagyhatalmat az ügy érdekében. Okos magyar diplomácia kell, amit erős hadsereg és összetartó nemzet támogat.” Pataki, 2018) What it refers to?

Which “great power” does that person refer to? Adolf Hitler was that “great power” who modified the borders of East-Central Europe in the late 1930-ies and “gave” territories “back” to authoritarian Hungary, to the Horthy regime, and Horthy entered these territories on a white horse, symbolically. Thus, fascist, Nazi, therefore Hitlerite ideas have been propagated in the Hungarian press, and such ideologists are supported. No doubt, it concerns Carpathian Ukraine, too, hence it is an important task of great significance to exclude Orbán (and Hungary) from the rebuilding of Ukraine, after the war.

Albeit which great power can be used to change the Trianon Peace Treaty signed 100 years ago? Certainly, there is only one major power left that is able and even willing to do this: Moscow. It would clearly be in Putin's interest to destabilize Eastern Europe, to have pro-American, NATO member countries jump on each other; so that under the umbrella of this, he could have a free hand in Ukraine. Thus, the Hungarian right-wing ruling elite has already for a long time propagating such a revisionist idea, which is in the interests of Putin.

In comparison, Géza Jeszenszky said in the same year, as for Transylvania, thus for a territory inhabited by the Hungarian minority: “In Hungary, nobody, more precisely no sensible person, will believe that the borders will change”– emphasized Géza Jeszenszky, former Minister of Foreign Affairs of the Antall-government in an interview given on the Romanian centenary to Bucharest’s in February 2018. (Kaszás, 2018)

### **3.3. Black Business of the Orbán-Regime for Regaining the Terrains of Neighbor Country, to Rebuild the Former “Great Hungary”.**

Influence has been made already during the years, also by buying land and large properties in neighboring countries. Orbán established the Infield Private Capital Fund (Termőföld Magántőkealap) with a budget of 400 million euros, albeit 70 percent of which is state money (thus, stolen from the pocket of the Hungarian people, because we, citizens, did not give him any permission for exporting the national fortune to the neighboring countries). This makes huge areas and historic properties in the neighboring states the property of the Hungarian state.

The Slovak state has already taken steps against this. In Slovakia, the ruling coalition and the opposition were equally outraged. Orbán's comrade-in-arms, Robert Fico, who is currently in the opposition, called the Hungarian prime minister a predator: “Orban is behaving like a predator who has weathered an old limp Doe” [“Orbán sa správa ako dravec, kóry zavetрил starú krívajúcu laň.”] – Fico said. Within the framework of good relations, all cross-border support should only be provided with the knowledge and approval of the receiving country, said the Slovak Minister of Agriculture and Rural Development, Samuel Vlčan. “I hope that Hungary will also return to this decent diplomatic practice. We consider the Slovak soil to be our national wealth and national heritage, the protection of which we will continue to strengthen legislatively even in these turbulent times” [“Verím, že aj Maďarsko sa vráti k tejto slušnej diplomatickej praxi. Slovenskú pôdu považujeme za naše národné bohatstvo a národné dedičstvo, ktorého ochranu budeme aj v týchto turbulentných časoch naďalej legislatívne posilňovať”] – said Vlčan. (Dugovič, 2021)

### **4. ORBÁN’S MANIPULATIONS AMONG THE HUNGARIAN MINORITY IN UKRAINE, FOR STRENGTHENING HIS POWER.**

Moreover, there is still another special aspect that makes any cooperation with the Orbán regime a dangerous risk, especially in the region of West Ukraine. It is the misuse of the issue of the Hungarian minority in the neighboring countries, because of the imperial ambitions of the Orbán regime, as we have already told above. The ruling mafia of Hungary, the Fidesz party, provides the members of the Hungarian minority groups in the neighboring countries with the registration of addresses of residency in Hungary, but in uninhabitable, ruined houses, or in such houses which more than a hundred inhabitants are registered in. This is clear evidence of election fraud because those imaginary inhabitants are voters for the Fidesz party at the elections.

There are houses in Hungary, next to the Eastern border of the country, in those a hundred or even three hundred people are registered as permanent residents, although they do not live there and most of these houses are already absolutely not suitable for living, even ruined. More and more reports have been published in the

Hungarian press of the opposition because it is a great swindle for the elections. (Kenyeres, 2021) Those “residents” are so-called “ethnic Hungarians” from Ukraine, Transcarpathian region, and appear when voting. Video reports were made on this problem, too, evidencing that even two hundred “inhabitants” were registered in a single house, which, however, was ruined. (Moskovics, 2018)

Another news reported that there was a criminal investigation because of the mass and fictitious registration of Ukrainian-Hungarian citizens in Kispalád, a small village next to the Ukrainian-Hungarian border. The police investigated forgery of public documents, and the Tax Authority investigated for budget fraud. It was reported by the family whose house of 115 Ukrainian-Hungarian citizens was reported on paper, in a single house with one hundred and fifteen registered fictive “residents”, and the owner of the house was promised to get something benefit and/or job, albeit she had not got anything. (Moskovics, 2019).

Another video proves that even criminal investigations started for the fictive, imaginary “residents”. They vote for the ruling Fidesz party because they have gained Hungarian citizenship and permanent residency in the European Union, albeit they do not live in Hungary but are registered in some ruined houses, crowds in one house, with the purpose to use benefits of the European citizenship. (Moskovics, 2018) Their votes increase the chances of the Fidesz in the elections, too.

As for the “ethnic Hungarians” in the neighboring countries, their right to vote by letter, and their votes at all, have given the ruling party a lot of chances of electoral fraud, as it was stated by the German Deutsche Welle. (Ozsváth, 2021) The protests of local, real inhabitants were called due to the appearance of a lot of Ukrainians by cars, who even do not inhabit the villages next to the border, but are registered as Hungarian citizens, and when voting for the local, and municipal leaders, they appear and vote for those persons of the Fidesz party, which are not desired by the really local inhabitants. The ruling Fidesz party keeps its power in those localities where the local inhabitants do not want it. (Moskovics, 2019)

Still, some more serious factors have been working in the background, as well. The number of Carpathian Hungarians is large enough to decide elections in the local districts, especially next to the border where these wage voters are registered, they can ensure the victory of the ruling Fidesz. On the national level of elections, these wage voters make a significant contribution, thus they may decide if the majority is simple or absolute, some mandates in the parliament, thus their significance is worth to be considered on the national level, too.

The “Carpathian card” is not a cause but a symptom. It is a dirty tool for manipulating public opinion, using the “nationalism-patriotism” card as well. Albeit much greater factors have been working in the



background. And the Russian secret services are constantly providing and encouraging right-wing movements in Hungary. (Editorial, 2023)

## 5. DISCUSSION AND CONCLUSIONS: POLAND'S ECONOMIC INTERESTS AND TASKS FOR DEFENDING THE HUMANKIND

Last but not least, Polish economy sources, the significant Polish capital is to be invested in West Ukraine, to get as much property as they can. Because the Hungarian mafia of Orbán tries to purchase lands, fields, and companies in the neighboring countries, around Hungary, to gain much power over neighbors. The Slovakian State already has taken steps against this. Albeit the Polish capital is much greater, the Polish firms may realize much profit in West Ukraine, when the situation becomes better, and the Ukrainian economy will be recovering. Then Polish investors, Polish firms, and Polish capital must own lands there, factories, plants, and companies, instead of the Hungarian mafia. When huge amounts of money come to provide the recovery in Ukraine, then the obligate task of Polish investors will be to gain that money, which came from the EU for this, instead of the Hungarian state, which is a mafia of thieves.

The deflection of Hungary from the Vishegrad-4 Group, and generally, from the European commitment of the East European countries, has already been studied by political analysts, who have highlighted the divergences between Poland and Hungary, emphasizing that Poland is a strong bastion of Europe against the Russian threat, albeit Hungary is a great risk of security. (Gosling, etc. 2022)

Poland has a great mission in West Ukraine, in order to defend Europe from Asian attacks and their agent as the recent Hungarian regime. The huge field of oil and gas in West Ukraine must be included in the mission of Poland as well. Therefore, East-Central Europe, under the leadership of Poland, has two tasks: to stop Russia and to stop the small brother of Russia, the Hungarian authoritarian leader Orbán, who is the Trojan horse of Putin in the European Union and NATO. Stop Putin and stop Orbán, too, for the safety of humankind.

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## RUS EMPERYALİZMINİN TARİHSEL GEÇMİŞİ HISTORICAL BACKGROUND TO THE RUSSIAN IMPERIALISM

FÖLDVÁRI, Sándor

ORCID: 0000-0002-7825-0531

alexfoldvari@gmail.com

Debrecen Üniversitesi, Beşeri Bilimler Fakültesi, Debrecen; Macaristan  
Araştırma Bilim Adamı (Kıdemli Araştırmacı) ve Litvanya Dili Profesör

### ÖZET

Saldırgan Rusya'nın davranışını daha iyi anlamak için kısa bir tarihsel bakış atmakta fayda var. Muscovy, bir devlet olarak, yoktan doğdu ve gelişti, eski Rus beylikleri zaten var olduğunda ve geliştiğinde, Tver, Suzdal', vb., 13. yüzyılda zaten geliyordu. Moskova Tatar yönetimi altında yaşadı ve Altın Orda'ya para ödedi. Bu Moskova devleti kısa süre sonra Avrupa ile keskin bir çatışmaya girdi, selefleri ise bunu yapmadı. Batı Avrupalı zengin Hansa kasabalarının Novgorod Cumhuriyeti ile üretken ticari temasları vardı, ancak Moskova'nın despotik diktatörlüğü ile temas kurmayı reddettiler. Buna karşılık, Korkunç İvan Livonia'ya saldırdı ve onu yok etti. Ardından Korkunç İvan, 1570 yılında Novgorod katliamında Novgorod demokratik Cumhuriyeti'ni yıktı. Muskovit çarlığının emperyal girişimleri Modern çağda da devam etti. Büyük Petro, “Avrupalılaşmayı” Asya Muskovisine zorladı ve Rus Ortodoks Kilisesi'ni Çarlık kontrolü altına aldı. Daha sonra 19. yüzyılda Rusya'nın genişlemesi, İngiliz Hükümetinin bir Danışmanının çalışmalarında değerlendirildi: Á. Vámbéry, Türkçe Efendi Reşid. 19. Yüzyılın sonlarında yazıldıktan sonra, 20-21 cc tarihindeki olaylar. kanıtlanmış Vámbéry: Kazaklar Ruslaştırıldı, ancak Türk edebiyat bilimi ve dilbilgisi Türkiye'de gelişti. Rus yönetimi altına alınanlar hiçbir fayda sağlamadı, çünkü Rusya herhangi bir ‘medeniyet’ getirmede ama Rusya onu yok etti. — Son zamanlarda, Rusya agresif genişleme olmadan var olamaz. Rusya'yı durdurmak, üzerine basılamayacak bir “kırmızı çizgi” olduğunu göstermenin tek yolu ile mümkün.

**Anahtar Kelimeler:** Rus\_emperyalizmi, Rus\_genişlemesi, Livonya\_Savaşı, Orta\_Asya.



## HISTORICAL BACKGROUND TO THE RUSSIAN IMPERIALISM RUS EMPERYALIZMININ TARİHSEL GEÇMİŞİ

**FÖLDVÁRI, Sándor**

**ORCID: 0000-0002-7825-0531**

**alexfoldvari@gmail.com**

**Debrecen University, Faculty of Humanities, Baltic Studies, Debrecen; Hungary**

**Research Scholar (Senior Researcher) and Lecturer of Lithuanian Language**

### ABSTRACT

This paper continues the previous paper in this congress book under the title “Commonwealth Versus Tsardom: Republican and Imperial Paradigms in the Historiography of the Byzantine-Rite Cultures in Eastern Europe”. Those are written there, must be considered here, too. It is worth taking a brief historical look to better understand the behavior of aggressive Russia, and to get a deeper insight into motives that move Russia’s policy, but to highlight only those historical facts that are relevant to our topic. Muscovy, as a state, was born and evolved from nothing when the former Russian principalities (Tver, Suzdal’, etc.) had already been flourishing and well-recognized states in the 13<sup>th</sup> century. Moscow lived under the Tatar rule and paid to the Golden Horde. (Thompson, 1991) Much influence was made on the Muscovian culture by the Tatar Conquerors, the “Asian character” of the Russians was due to the Mongol impact. This Muscovian state soon put in sharp conflict with Europe, while its predecessors did not.

Ivan the Terrible, the cruel Tsar of Muscovy, conquered and destroyed the democratic Republic of Novgorod in the massacre of Novgorod in 1570. Before that, the West-European rich Hansa towns had prolific trade contacts with the Republic of Novgorod, but they refused to keep contact with the despotic dictatorship of Muscovy. (Angermann&Friedland, 2002; Mühle, 1991) In response, Ivan the Terrible attacked Livonia and destroyed it.

Imperial attempts by the Muscovian tsardom were continued in the Modern age, too. Peter the Great forced the “Europeanization” to the Asian Muscovy, establishing a new capital at the estuary of the Neva, subjugating the Russian Orthodox Church under the Tsarist control, establishing the Synod instead of the patriarch, and he named it Europeanization. Albeit all these did not evolve due to some organic development but were unfolded due to the will of the monarch. While in the Polish-Lithuanian Rzeczpospolyta already in the 16<sup>th</sup> century, the noblemen, thus the shlachta controlled the King, in Tsarist Russia yet in the 18<sup>th</sup> century the almighty monarch controlled the boyars. The European development was different from the Muscovian despotism.



Then we focus in the paper on the Russian expansion in the 19<sup>th</sup> c. as it was reflected in the works of an Advisor of the British Government: Á. Vámbéry, in Turkish Efendi Reshid). The events during the history of 20-21 cc. proved Vámbéry: while the Kazakhs even nowadays do not have yet normal references to their language and literature in their mother tongue but Russian, and they have been Russified.

Those who were put under Russian rule did not gain any benefit because Russia did not bring any ‘civilization’ but destroyed it. The recent authors in the field are of a similar opinion: Russia cannot exist without aggressive expansion. (Kushnir, 2022) Russian imperialism is an essential phenomenon of the Russian regime. (Grod, 2021) How to stop Russia? The only way to stop Russia is to show that there is a “red line” that cannot be crossed, and then the bear feels its paw being hit when it crosses the border.

**Keywords:** Russian\_imperialism, Russian\_expansion, Livonian\_War, Central\_Asia.

## 1. INTRODUCTION

With the purpose of better understanding the behavior of the aggressive Russia, and to get a deeper insight into those motives that move Russia’s policy, it is useful and inevitable, to take a brief historical look, but to highlight only those historical facts which are relevant to our topic. Such an overview has already been taken by the author in his previously published papers, and now it is given a broad insight here. (Földvári, 2021; 2023; 2023a) Muscovy, as a state, was born and evolved from nothing when the former Russian principalities (Tver, Suzdal’, etc.) had already been flourishing and well-recognized states in the 13<sup>th</sup> century. Moscow lived under the Tatar rule and paid to the Golden Horde. (Thompson, 1991) Much influence was made on the Muscovian culture by the Tatar Conquerors, as a Hungarian scholar mentioned it, writing about the history of the Russian culture: the “Asian character” of the Russians was due to the Mongol impact on their culture. (Hajnády, 1995) This Muscovian state soon put in sharp conflict with Europe, while its predecessors did not.

There existed earlier an especially democratic state, The Republic of Novgorod, which was a republic of the city, thus a polis-state (Greek πόλις), ruled by the council of the rich merchants but not by some authoritarian power. The Northern German towns, which kept in their hands the trade, were likely to keep trade relations with Novgorod. This alliance of towns formed the Hansa League, which had several member towns in Livonia, too. (Angermann & Friedland, 2002; Mühle, 1991) However, the Hansa League and especially the Livonian towns stopped their trade and administrative relations with Muscovy. Their citizens were not allowed to go to Moscow. Because the healthy logic of the tradesmen felt the danger of the authoritarian Muscovy, with good reason. (Kirchner, 1944:42) The Muscovian answer was rudely cruel: “If you do not put in good trade relations with me, then I will conquer and destroy you” - and Muscovy did it. A decade later, Ivan the Terrible, the cruel Tsar of Muscovy, conquered and destroyed the democratic Republic of Novgorod in the massacre of

Novgorod in 1570. Thus Novgorod stopped existing, because the authoritarian state Muscovy arose, and it was the tragical turning point for the opportunity of any European development in Russian history.

Imperial attempts by the Muscovian tsardom were continued in the Modern age, too. Peter the Great forced the “Europeanization” to the Asian Muscovy, establishing a new capital at the estuary of the Neva, subjugating the Russian Orthodox Church under the Tsarist control, establishing the Synod instead of the patriarch, and he named it Europeanization. Albeit all these did not evolve due to some organic development but were unfolded due the will of the monarch. While in the Rzeczpospolyta already in the 16<sup>th</sup> century, the shlachta controlled the King, in Tsarist Russia yet in the 18<sup>th</sup> century the almighty monarch controlled the boyars. The European development was different from the Muscovian despotism. The enlightened absolutism in the 17<sup>th</sup> and 18<sup>th</sup> centuries in Europe led to the unfolding of the national consciousness, the European rulers were protectors of the national cultures – while in Russia the silly, puffed-up elite spoke French and looked down on their homeland.

The recent authors in the field believe that Russia cannot exist without aggressive expansion. (Kushnir, 2022) Russian imperialism is an essential phenomenon of the Russian regime. (Grod, 2021) How to stop Russia? When Russia can see that there is a border, there is a “red line” that it cannot step over, and then the bear feels its paw being hit when it crosses the border. Russia must realize strictly, that “this is the border, and you, Russia, must not step over this line because it is the border of your power”. All these imply not only some military or political, but also economic, trade, and financial aspects and tasks, too.

Poland’s mission is of great significance not only in the military but in the economic aspect as well. Poland must resist Russia, also to keep Ukraine’s ability to resist, not only militarily but also economically, too. This is not a question of help and aid, because Poland may have much profit from investing in the Ukrainian economy, mainly when the rebuilding begins after the war. Thus, let us see these questions in a bit more detail.

## **2. RUSSIA’S IMPERIAL EXPANSION IN THE TIME OF TSAR IVAN THE TERRIBLE: THE LIVONIAN WAR (1558-1579)**

The Livonian War lasted from 1558 to 1583 and involved the Muscovian Tsardom and the Polish-Lithuanian Commonwealth. It ended with the victory of the Polish King and Grand Duke of Lithuania, Stephen Bathory. The causes of the war, as well as the causes of the victory of the “Res Publica of Two Nations” (Rzeczpospolita Obojga Narodów) over the Muscovian mad ruler, were already treated in one of our previous papers, thus here we do not repeat those that have already been published elsewhere. (Földvári, 2023b) In our interpretation, the main factor of the Livonian War was the question of the Hansa League and its relations to the democratic republic of Great Novgorod and the despotic totalitarian state of Muscovy. We explained it in our

previous paper. (Földvári, 2024) Beyond it, it is emphasized that in the Early Modern Age, the bourgeoisie had already been the engine of historical development, via the urban society. It resulted in the confessionalization, and the market of ideas due to book printing, appeared already in the West, as well as in the Polish-Lithuanian Commonwealth, but not in Muscovy. About these latter factors, we have here published another paper under the title title “Commonwealth Versus Tsardom: Republican and Imperial Paradigms in the Historiography of the Byzantine-Rite Cultures in Eastern Europe”.

The Muscovian state was born and grew up from nothing when the former Russian principalities had already been flourishing and recognized states. Moscow was under the Tatar rule and paid tax to the Golden Horde. Much influence was made on the Muscovian culture by the Tatars, as a Hungarian scholar mentioned, writing about the history of the Russian culture: the “Asian character” of the Russians was due to the Mongol impact on their culture. (Hajnády, 1995) This Muscovian state soon put in sharp conflict with Europe, while its predecessors did not. There existed an especially democratic state, Novgorod, which was a republic of the city, thus a town-state, ruled by the council of the rich merchants but not by any authoritarian power. The Northern German towns that formed the Hansa League, stopped all trade also administrative relations with Muscovy. (Kirchner, 1954) The Muscovian answer was cruel: if you do not put in good trade relations with me, then I conquer and destroy you, and Muscovy did it.

Livonia ceased, and new Russian inhabitants settled in former flourishing Hansa towns, with Russian Orthodox priests, and the local cultural heritage was destroyed, and the local population was forced to decrease. Russian soldiers treated the local population very harshly and rudely, sold prisoners of war into slavery to the Tatars, and the local inhabitants were tortured, even with women they were cruel. Nothing such behavior was apparent from either Swedish or Polish troops but Muscovian. A lot of images depicting the Muscovian sadism were distributed throughout Europe. (Bresslein, 1561) Two powers could help Livonia: The Swedish Kingdom and The Polish Kingdom; the latter was the dominating part of the Polish-Lithuanian twin state. On this ground, the Livonian War took place, and then the war of Stephen Bathory, the Polish king of Hungarian origin, ended with the victory of Poland over the Muscovian dictator. The struggle between Poland and Russia was essentially a struggle between the West and the East.

**Sehr grewliche/erschrocke-**  
**liche / vor unerhörte / wahrhaftige Neue zeyt-**  
**ung/was für grausame Tyranny der Moskowiter/an-**  
**den Gefangenen/hinweggeführten Christen auß Lysland/ beydes an**  
**Mannen vnd Frauen/ vnd Frauen vnd kleinen Kindern/ beyge-**  
**het/ vnd was täglichs Schadens er ihnen in irem Land zufüget. Dey-**  
**neben angezeygt / in was großer Fahr vnd not die Lyslander**  
**stehen. Allen Christen zur warnung/ vnd bes-**  
**serung ihres Sündlichen Lebens/ auß**  
**Lysland geschriben / vnd in**  
**Druck verfertiget.**



Zu Nürnberg bey Georg Keyserlein. M. D. L. XL.

1. Figure Russian Atrocities in Livonia. Source: Zeyttung, Nuremberg. 1561

What is worthy of special interest, is that Orthodox Christianity in the Polish-Lithuanian Commonwealth was different from the Orthodox Christianity in Muscovy. For these very important social differences, we have written another full paper in this congress book under the title “Commonwealth Versus Tsardom: Republican And Imperial Paradigms In The Historiography Of The Byzantine-Rite Cultures In Eastern Europe”. Therefore, here we do not repeat that but we refer to the other paper of us in this book.

Noteworthy, the East Slavic people in the Polish-Lithuanian Commonwealth, of Orthodox Christianity, inhabited the recent Ukrainian and Belarusian lands, did not undergo such a significant Tatar impact. (Földvári, 2023b) The Polish-Lithuanian Commonwealth (including Ukrainian territories as well), which state, by its modernization in the European way, provided a good soul for Confessionalization – while there was no room for the Confessionalization in the Muscovian Tsardom (Földvári, 2021, with further literature). The Orthodox brotherhoods (confraternities) appeared on the lands of the Rzeczpospolitya, while in the Muscovian Tsardom, such civil associations did not appear at all, and everything -thus the printing, too- was centralized by the totalitarian state. (Isaievyh, 1993) Therefore, Orthodoxy in the Polish-Lithuanian Commonwealth, and to some extent on Romanian lands, too, had opportunities for developing in the European way, which came out to such a situation was similar to Protestantism in the West; since the spreading of book-printing and evolving of the national consciousness happened due to the Protestantism in West (Anderson, 1991).

### 3. RUSSIA'S EXPANSION IN THE 19<sup>TH</sup> C. CENTRAL ASIA – AS IT WAS REFLECTED IN THE WORKS OF AN ADVISOR OF THE BRITISH GOVERNMENT: Á. VÁMBÉRY.

It seems an author is less known for the researchers in the field: Ármin Vámbéry's political analysis of Russia's position in the “Great Game” with the British Empire in the 19<sup>th</sup> century. The main works by Vámbéry were ethnological books, certainly, because he went to Central Asia on foot and pretended himself a Turkish Dervish therefore, he published authentic works on the Turkish peoples, and their customs, history, and religious life. Albeit it was of great importance that he published books also about the “Great Game” between Tsarist Russia and the British Empire, such as “Russlands Machtstellung in Asien” [“Russia's Power Position in Asia”, in German] and “Zentralasien und die Englisch-Russische Grenzfrage” [“Central Asia and the English-Russian Border Question”, in German] (Vámbéry, 1871, 1873). It is of great significance, how Vámbéry saw this “Great game” from the very scene of it, thus from Central Asia, being wondering there in Khiva and Bokhara, and how he criticized the imperial ambitions of Russia in this competition. He was appointed as an advisor to the Government of Great Britain and he delivered numerous lectures in London, too, with great respect for his knowledge of the East.

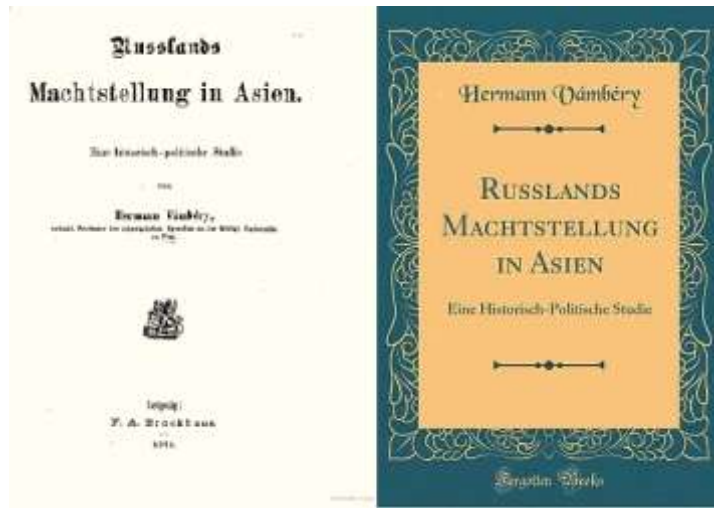


2. Figure Vámbéry's wanderings in Central Asia

Turkish peoples of Central Asia heard about the Muscovian policy and Russians' despotic approach to their subordinated vassals, thus the Central Asian peoples were not likely to become such. Although they did not want to be put under the power of the West, either, Vámbéry had already studied the beginnings of Turkish modernization in Istanbul, and he believed that the benefits of Western civilization must be acquired while keeping the traditional national values as well. Russia did not appear to give chances for any development, but the highest socio-cultural civilization of the British Empire seemed to give it, thus the British rule seemed to be more promising, in the 19<sup>th</sup> century. Vámbéry wrote: “The [Russian] intelligentsia, the official caste or ruling



class, headed by the ruling dynasty [the Romanoffs], would only bear some coloration of European culture and were somewhat touched by the spirit of the West, but the great crowd is woven into a real Asian rib, and even in the face of the redoubled effort to cling to the double cross [the sign of the Orthodox Christianity], there is not a single hair-measure difference between them and the Buddhists and the Mohammedans of Asia...” — as the West accustomed to sit on its results but did not make efforts for defending the Western results thus leaving the room to Russian conquests. Western voyagers always complained about the low level of Russian culture and the rudeness of Russian national costumes. Those diplomats who were accredited to Moscow always scolded the retarded Russian mentality. (In the German original: “Die Intelligenz , Beamten kaste oder herrschende Klasse , an deren Spitze das Herrscherhaus steht , haben einen Anflug von europäischer Bildung , sind von abendländischem Geiste angehaucht , während die grossen Massen Asiaten von Schrot und Korn sind und sich trotz dem doppelten Eifer , mit dem sie dem Doppelkreuze anhangen , nicht um ein Haar breit von den asiatisch - buddhistischen und mohammedanischen Glaubens bekennern unterscheiden , ja , an allen Gebrechen und Lastern , die wir den Orientalen vorwerfen , noch hundert fach mehr kranken.” Vámbéry, 1871:4-5.)



3. Figure Vámbéry: Position of Russian Power, original and one of the reprints

To better understand the thoughts of Vámbéry in the 19<sup>th</sup> century, please consider how Muscovian Tsardom ruined and destroyed the Polish language and culture since the end of the 18<sup>th</sup> century (Kamusella, 2013), after the partitions of Poland. (Halecki, 1963) The parallel with the fate of Poland is prolific also in the case of proving the differences between the Western and Russian way of destroying the local cultures: the Prussian and Austrian rule gave some westernization to the subordinated Polish territories, and even today the West-Poland territories stand out with their western character, as it is proved by exact investigations. (Jedlicki & Łubieńska, 1992) But those territories of Poland that were subordinated to Russian rule suffered with the prohibition of the Polish language and culture, as well as Lithuanian and Ukrainian languages, too, were

prohibited in the Muscovian Tsardom. Russia did not give any good to the conquered peoples but destroyed everything that was gained by the long development of the Polish-Lithuanian Commonwealth. Albeit Germanization was the lesser evil: although it did not permit the usage of Polish, but it urged some development in other spheres of social and economic life. Conquerors are conquerors, albeit there are civilization-building nations and civilization-destroying nations. The English were civilization-builders albeit Russians were and have been civilization-destroyers, as for their role in the conquered nations, according to Vámbéry's views in the 19<sup>th</sup> century. Another parallel from everyday life. Health is of extremely great significance. Medical operations in surgeries are of great risk. Albeit if someone is put in danger of some serious health problem, what is the better: to suffer with an operation by the surgeon, considering the risk you may remain invalid or even die, or to refuse any medical operation and face the sure death. This was the difference between the British and Russian forms of colonization in the 19<sup>th</sup> century.

As for the “Great Game” in the 19<sup>th</sup> century, Ármin Vámbéry's viewpoint led to the argumentation for Western protection over the Asian peoples, considering the benefits of the British civilization. His books have lately been reprinted many times in West Europe because this is still a pressing question today, too, thus it has already been a bestseller of real actuality. (Vámbéry 2011, 2018, 2022). He visited the poor Central Asian peoples and took care of them, he wanted to awaken the West to the danger of Russian expansion. Vámbéry emphasized: Russia is a strictly auto-despotic state, much more, than the Asiatic states. (Thus, Russian is not an “Asiatic” dictature but something even worse, in the view of Vámbéry.) Even in Asia hardly find any such autocratic state. Vámbéry criticized Great Britain for it was lazy and did not take care of its own interests for “the last 25 years”, thus in the 1840-60-ies. The British were too much satisfied with their results and fortune and did not take care of keeping and defending their goods and power – highlighted Vámbéry. Hence, Great Britain was responsible for the sad situation that the concurrent power gained much room and already it seemed impossible to stop Russia. His conclusion is: if England is not able or not likely to resist the conquer coming from the East (thus the conquer by Russia), then the other powers of Europe must do it, such as France. Hence, the conclusion of Vámbéry was that Russia must be stopped by the collaboration of the Western powers, and if one of the Western great powers seems to be weak or busy with other tasks, then another Western power must resist the Russian expansion, just because Russia was (and we can say: it still has been) a great danger for the whole West. The learned lesson was as follows: while the West did not take care of the Russian expansion, the Muscovian bear was preparing for new and new conquests.

After it was written in the late 19<sup>th</sup> century, the events during the history of 20-21 cc. proved Vámbéry: while the Kazakhs even nowadays do not have yet normal references to their language and literature but in



Russian, and they have been Russified, the Turkish literary science and grammar flourished in the 20<sup>th</sup> century in Turkey/Türkiye. A very clear example was India, which acquired the English civilization and when it deliberated from the British colonization, India preserved its identity which was based on a long tradition of several thousand years, preserved by the Sanskrit language, and Hindi religious culture, at the same time it used the benefits of the British civilization as well. Nowadays every schoolchild in India learns English up to the level of the mother tongue, Indians speak English as natives, and at the same time, they are proud of their local languages and local cultural heritage as well. But those nations put under Russian rule remained retarded and their identity, culture, and traditions were ruined. Those who were put under Russian rule did not gain any benefit because Russia did not bring any ‘civilization’ but destroyed it. Hence, the ‘evil’ colonization powers were different, thus one of them was less wrong, and the other more wrong, and Russia was the worst of all.

#### **4. THE ETHNIC RUSSIANS HAVE CHOSEN THE WESTERN DEMOCRACY BUT NOT THE MUSCOVIAN DESPOTISM.**

Western states recognize Ukraine and provide Ukraine with financial and moral help; thus, Russia’s power is decreasing, and Russia does not want to allow its power to decrease but always to expand. It was the cause the Russian-speaking population of Ukraine resisted the Russian invasion but did not welcome the Russian brutal army by no means. The Ukrainian nation as a political nation has strengthened, and Ukraine has now even more moral potential to resist Russia than earlier.

To better understand it, please allow us to take for example the case of Russian inhabitants in the Baltic states – and those in Ukraine, for a comparison. Former Estonian Minister of Defence (before 2015) Hannes Hanso said in a speech of his, delivered at the Hungarian-Estonian Society at the Faculty of Humanities of the Eötvös University in Budapest, Hungary, on December 8, 2016: Russian inhabitants in Narva (North-East Estonia) were asked by Moscow about their identity and “problems”. The Russian inhabitants of Estonia answered to Moscow: “we do NOT need any ‘International help’ from Russia”. Hanso emphasized, those Russians living in the West-oriented independent states, that were liberated from the yoke of the Soviet Union, do not want any ties with Moscow but links to the West. They understand that their future and their perspectives have been much better within the frameworks of the European Union than in any Eurasian community. Russian-speaking citizens in the Baltic states are committed to Europe rather than to Moscow. (Hanso, 2016)



4. Figure Hannes Hanso, former Minister of Defense of Estonia (right)

with the author, S. Földvári (left) at the Budapest University in 2016 (photo: Aspectus)

Russian minority's new generation has already integrated into the Baltic society, and Estonian Russians send their children to Swedish-language or English high schools, to give them a better chance for a successful life, to get skills for integrating into Nordic countries when getting their jobs, but nobody of them wants to strengthen ties with Moscow. Thus, the Narva district is the terrain of the Russian majority in Estonia (Trimbach & O'Lear, 2015), but the Russian-speaking Estonian citizens in that region answered a survey about Russia's possible intervention in Estonia: "We do not need any international help". (Balmforth, 2014)

Such statements by Baltic experts may be applied to the Russian-speaking inhabitants of Ukraine, too. They realize their future seems much better within the framework of a European country than in Muscovy. When Putin, the latest Russian Tsar visited Ukrainian cities with his troops and rockets, he expected the Russian-speaking inhabitants would wait for his soldiers with flowers. Albeit demonstrations against the Russian occupiers went day by day, with Ukrainian flags in the hands of the Russian-speaking citizens of Ukraine, in Kherson, which has absolutely been a Russian-inhabited city on the South bank of Ukraine and was occupied in the first days of the war. Hence the mother tongue is not the only factor of identification but the commitment to values and culture. Russian inhabitants of Ukraine identify themselves as citizens of the Ukrainian political nation, but not as parts of the despotic Muscovy. The forcibly introduced Russian citizenship on the occupied territories of Ukraine is sad evidence of this fact. The Russian invaders have been deporting those Ukrainian citizens who do not accept the citizenship of Russia. Therefore, those who live in Ukraine, do not want to be a Russian citizen even in the case that living area has been occupied by the Russian army, but the Russian-speaking inhabitants of Ukraine keep their commitment to Ukraine and the fascist occupiers forcibly deport them to far territories of Russia, with the purpose to russify them. (Coynash, 2023 )

Nobody chose Russia to live there but to escape from there. Russia never acquires people to move there but forcibly deports them there, especially children. A study by the Yale School of Public Health shows that

Moscow has established a whole “network of re-education and adoption facilities” in Russia and occupied Crimea, with 43 camps where Ukrainian children have been held since Feb. 24, 2022, already identified. The report says that the camps aim to “integrate” children from occupied territories “into Russian life and enforce a version of Russia's history, culture, and society that serves the political interests of Russia's government.” In another case, according to Russian independent media outlet Meduza, local authorities of Russian Krasnodar claimed that over 1,000 children from occupied Mariupol were adopted into Russian families in remote cities such as Tyumen, Irkutsk, Kemerovo, and Altai Krai in August. (All these sources are referred in Shulzhenko, 2023) This was the cause the International Criminal Court (ICC) in The Hague issued an arrest warrant against Vladimir Putin and his “servant” Maria Lvova-Belova on March 17 of this year. (ICC Press Release 2023)

In connection to this problem, it is an often-raised question of how to democratize Russia and whether it will be the solution to the problems. No doubt, the Russian authoritarian regime is a great danger to humankind, the existence of Russia is a great risk to the whole world. Let us refer to a prominent member of the European Parliament, the former leader of the Lithuanian delegation, Andrius Kubilius, who has recently been elected as the Commissioner of the EU for defense and space. Kubilius believes that Russia must be democratized, the basic and essential changes in the Russian society may save the World from the recent and further imperial aggressions of Russia. In addition to the standard arguments about the security and welfare of Ukraine, Kubilius is promoting another one on which he has special hopes: that it is Ukraine's accession to NATO that will be the key condition for launching the transformation in Russia that the West so persistently dreams of — said the Lithuanian MEP during his visit to Kyiv in the very beginning of March. (Kubilius, 2023)

Noteworthy, the small Baltic nations trust the Russian people but not the Russian leaders. However, they suffered much from the Russian conquest for centuries. The solution for the problems given by Russian imperialism is “the complete democratization of Russia; for the average Russians are good in their heart, but their social system is totalitarian, and they are worthy to live in a democratic society because they are worth for the democracy, which they miss. A democratic society must evolve in Russia whenever in the future” – said Dr. Ene Ergma, lady President of the Estonian Parliament in 2003/2006, when she visited Hungary and delivered a lecture at the Hungarian Estonian Society in Budapest, where the author of this paper sat in the audience.

## 5. DISCUSSION AND CONCLUSIONS

Russia cannot exist without aggressive expansion. Russian imperialism is the essential phenomenon of existing Russian society. It is a state, a society which needs always to expand, to demonstrate to the people “indoors” the leadership is strong (thus the people will respect the authority leadership) and to demonstrate “outdoors” that it is a strong big power and the states and all the world must fear of Russia. It is the essential

character of Russia. Thus, the world, the Western world has to keep Russia within its borders. You cannot make treaties or negotiations with Russia and sit on the bottom in peace. Russia will not comply with the agreement unless you force it. Russia can understand only the language of force and power. Russia cannot understand any gentleman's agreement. Russia went and has been going and will go until the borders. What can make Russia stop? When Russia feels or can see that there is a border, there is that “red line” that cannot be stepped over. No diplomatic agreement and no negotiation can stop Russia but the force. Russia has to realize that this is the border and you, Russia, must not step over this line because it is the border of your power.

As for the recent situation, the historical background proves, consequently, that the elimination of Putin from power is not enough, but it is necessary to change the entire Russian society from an illiberal, authoritarian regime to a democracy. Similarly, Hungary, too, must be changed to a liberal open society, thus a real democracy. Then Ukraine, joining the European countries, can be a prolific and developing member of East Europe. The only solution is the western democracy. Thus, democracy, because no “Asian” or “illiberal” democracy exists but the democracy itself alone, and authoritarian, even dictatorial regimes on the other hand. Another consequence is the mission of Poland. It is explained in our second paper in this conference book, under the title “Why to Prefer Poland to Hungary as for Ukraine”. As for the recent situation, we refer to that other paper, which is published here in this book.

What is the reason for the historical background to be considered? As for the recent controversies, the solution is to think about the future but not the past. Healthy people, such as Americans, use the phrase: “It is already History!” Another commonplace is, “Politics is the science of the possibilities”. Hungarians lost the First World War, and thus looser suffered. Then Hungary lost the Second World War, and the loser suffered. It is the reality of the History. Children cannot accept reality but adults. Those who are tearing up and crying, instead of writing modest research papers, never get success or healthy minds and bodies. It is hardly possible to understand the complaints of those Hungarians, who suffer in the poor and underdeveloped Ukraine or Romania, lamenting their “cruel fate” — while those ethnic Hungarians, who live in Austria, prefer to speak German even in kindergarten, to get perspectives. When the Ukrainian or Rumanian language (and the country) becomes such competitive, as German and German, then no complaint will arise. Whenever the author of this paper delivered his lectures at Rumanian conferences, the kind Romanian colleagues were very friendly, and accepted him with much respect – while those people coming from Transylvanian Hungarian villages have been (in a large ratio) primitive in their behavior. As a consequence, the solution and only solution is the European Union and American liberalism. All Hungarians, Lithuanians, Romanians, and in the far future, Belarusians,

will enjoy the benefits of European citizenship in the free world of multicultural liberalism, and that will be the peaceful heaven on this Earth. (Földvári, 2020a; 2020b)

The “Intermarium” alliance, that is, the wide cooperation of the countries from the Baltic Sea to the Black Sea, is a good way and the only possible way to form a strong block against Russian imperialism. The great Poland, large Ukraine, and the small but active countries such as Lithuania, too, may form a strong and determined block. Noteworthy still the Czech Republic, for Czech is already a very European country and is now becoming a netto payer of the European Union, thus, not living on financial aid but to provide others by them. It has a symbolic meaning, the former commissioner on Justice, Consumers, and Gender Equality at the European Commission, Věra Jourová was of Czech origin. Such an “Intermarium” block may cumulate the economic sources and political power to resist Russian military imperialism and, on the other hand, to provide East Europe with the building of the Western type of democratic societies and economic and trade development, too, to leave the post-communist retarded status of economy and political culture. Why Hungary must be -at least temporarily- excluded from this, has been explained in our second paper in this conference book, under the title “Why to Prefer Poland to Hungary as for Ukraine”. As for the recent situation, we refer to that other paper, which is published here in this book.

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## AZERBAIJAN'S EVOLVING ENERGY LANDSCAPE

**Iosefina Blazsani-Batto, Ph.D.**

**ORCID: 0000-0002-7975-3800**

**[iosebatto@yahoo.com](mailto:iosebatto@yahoo.com), +40744374607**

**Babes-Bolyai University, Faculty of European Studies, Cluj-Napoca, Romania**

### Abstract

Azerbaijan stands as a pivotal energy producer and transit hub, strategically positioned at the intersection of Europe and Asia. Its energy sector, historically dominated by oil and natural gas, has undergone significant transformations, driven by geopolitical shifts, infrastructural projects, and the global energy transition. Key developments, such as the completion of the Southern Gas Corridor (SGC), have reinforced Azerbaijan's role as a reliable energy supplier to Europe, reducing the continent's dependence on traditional sources and enhancing regional energy security. Through partnerships with neighboring countries and strategic international agreements, Azerbaijan has positioned itself as a cornerstone of energy diversification efforts.

In tandem with these advancements, Azerbaijan has begun exploring renewable energy opportunities. Investments in solar, wind, and hydrogen energy reflect the country's recognition of the global shift towards sustainable energy sources. While initial projects in these areas have attracted international collaboration and financing, fossil fuels continue to dominate Azerbaijan's energy portfolio, posing risks in an increasingly decarbonized global market. The country's ability to integrate renewables effectively while leveraging its existing resources will be a key determinant of its long-term energy security and economic resilience.

Despite its achievements, Azerbaijan faces challenges tied to environmental and social dimensions. The extraction and export of hydrocarbons raise concerns about ecological degradation, particularly in the Caspian Sea region. Additionally, socio-economic inequalities persist, with energy revenues disproportionately benefiting urban centers over rural areas. Addressing these issues requires comprehensive policy measures that prioritize equitable development and environmental sustainability alongside economic goals.

Azerbaijan's evolving energy strategy underscores the complexities of balancing economic growth, geopolitical significance, and environmental responsibility. Its ability to adapt to a rapidly changing energy landscape will determine its future relevance in regional and global markets. By embracing diversification, addressing socio-environmental challenges, and fostering innovation in renewable energy, Azerbaijan has the potential to secure its role as a forward-thinking leader in the global energy sector.

**Keywords:** Azerbaijan, Energy Sector, Southern Gas Corridor, Renewable Energy, Geopolitics, Global Energy Transition.



## TRANSFORMING EDUCATION IN ROMANIA: ANALYZING THE IMPACT OF THE CRED PROJECT

**Iosefina Blazsani-Batto, Ph.D.**

**ORCID: 0000-0002-7975-3800**

**[iosebatto@yahoo.com](mailto:iosebatto@yahoo.com), +40744374607**

**Babes-Bolyai University, Faculty of European Studies, Cluj-Napoca, Romania**

**Mirela Maria Iancu**

**[meea09mir@yahoo.com](mailto:meea09mir@yahoo.com), +40741277838**

**Teachers' Training Center of Sibiu, Romania**

### Abstract

The "Relevant Curriculum Open Education for All" (CRED) project stands as a landmark reform in Romania's education system, addressing critical issues such as high school dropout rates and inequitable access to quality education. Funded by the European Social Fund and implemented between 2017 and 2023, the project aimed to modernize the national curriculum by introducing a competency-based approach aligned with European standards. Central to the initiative were teacher training programs, the development of open educational resources (OER), and targeted support for vulnerable student populations, including those from low-income backgrounds, ethnic minorities, and students with disabilities.

The CRED project employed a mixed-methods approach to evaluate its implementation and impact. Quantitative data highlighted the scope of the initiative, with over 55,000 teachers receiving accredited training and more than 2,500 vulnerable students engaged in extracurricular programs designed to reduce educational disparities. Qualitative insights were derived from thematic studies, pilot program evaluations, and feedback from educators and stakeholders. Additionally, longitudinal data analysis provided evidence of the project's influence on reducing dropout rates and improving student performance metrics over time.

Key findings from the project underscore its transformative impact on Romanian education. One of the most significant outcomes was the empowerment of teachers, who were equipped with the skills and resources needed to implement innovative, competency-centered teaching methods. The training programs, which combined face-to-face and online learning, ensured that educators were prepared to address the diverse needs of their students effectively. Furthermore, the project contributed to educational inclusion by developing tailored resources and methodologies for vulnerable groups, enabling them to participate more fully in the education system.

The CRED initiative also made substantial progress in advancing digital literacy and resource accessibility. Platforms like EduCRED and RED offered over 1,400 open educational resources, including methodological



guides, video tutorials, and competency-based learning tools. These resources not only supported classroom teaching but also proved invaluable during the COVID-19 pandemic, when online learning became essential. The pilot phase of the new curriculum provided valuable insights, allowing for adjustments before its national implementation. The introduction of integrated elective programs further enriched the curriculum, promoting interdisciplinary learning and fostering skills such as critical thinking, creativity, and problem-solving.

Looking ahead, the sustainability of the CRED project is a priority. The post-implementation phase (2024–2027) includes ongoing teacher training, updates to educational resources, and continuous monitoring and evaluation to maintain the project's achievements. By prioritizing inclusivity and fostering a competency-based learning environment, the CRED initiative has set a benchmark for systemic and sustainable educational reform. In conclusion, the CRED project represents a significant step forward in addressing disparities in Romania's education system. Through its focus on teacher training, resource accessibility, and innovative curricular approaches, the project has successfully created a more inclusive and equitable educational framework. Its achievements provide a valuable model for other countries seeking to modernize their education systems and address the needs of vulnerable populations.

**Keywords:** Competency-Based Curriculum, Educational Inclusion, Teacher Training, Open Educational Resources (OER), Romanian Education Reform, CRED Project, Digital Literacy.

## A NEW PHILOSOPHY FOR HEALTH: THE SENSE OF LIFE, DEATH, AND "INFINITANDO" AS COMPLEMENTARY PARAMETERS FOR HEALTH IN MEDICINE AND SOCIETY

**Name: Dr hc Vicente Pironti**  
**AFFILIATION: OPEN UNIVERSITY HUMANIZA**  
**17 December 2024-Brazil**

Prof. Dr.h.c. Vicente Pironti(FMERU&FMERC), Doctor Honoris Causa(IBERO—IBAM UNIVERSITY) and POST DOCTORATE FELLOW OF EUDOXIA UNIVERSITY(FMERU&FMERC), Founder of the Humaniza network, is recognised and specialised in (INVENTING SOCIAL TECHNOLOGIES)

Site: [www.humaniza.com.br](http://www.humaniza.com.br) Address: Street Albino Buzolin 03, Jardim Santo André, Limeira City, São Paulo State, Brazil Country Email: [vicentepironti@gmail.com](mailto:vicentepironti@gmail.com) / [pironti@humaniza.com.br](mailto:pironti@humaniza.com.br)

### Abstract

The current paradigm in healthcare predominantly emphasizes disease management and reactive approaches. This paper proposes an innovative framework for health that integrates a broader philosophical perspective. By considering the "Sense of Life" and the "Sense of Death" as essential parameters, alongside the concept of Infinitando, this research redefines health in a holistic and transformative way. Drawing from philosophy, mathematics, and spiritual intelligence, the framework advocates for proactive methodologies that embrace the interconnectedness of body, mind, and universe. Complementary approaches such as storytelling, art, and humanization practices in healthcare are explored as essential tools for fostering empathy, compassion, and well-being. This paper also discusses successful case studies and highlights the importance of rehumanizing health education and services.

## **Introduction**

Healthcare systems worldwide are predominantly reactive, focusing on disease diagnosis and treatment. However, health transcends the absence of disease and includes physical, mental, emotional, and spiritual dimensions. The World Health Organization defines health as a "state of complete physical, mental, and social well-being," but this definition omits deeper existential components of human life. By introducing the concepts of the Sense of Life, Sense of Death, and Infinitando, this study proposes a complementary perspective that considers the human experience, purpose, and the expansion of the infinite.

The philosophical insights of Viktor Frankl, Hannah Arendt, and Aristotle are integrated with modern mathematical concepts such as Georg Cantor's transfinite numbers. This interdisciplinary approach reflects the profound connection between human purpose, mortality, and the infinite expansion of life.

## **Part I: A New Philosophy for Health**

### **1.1 The Sense of Life and Spiritual Intelligence**

The Sense of Life refers to an individual's ability to find purpose and meaning despite challenges. As Viktor Frankl argued in his logotherapy framework, discovering meaning is essential for overcoming suffering and maintaining resilience. Spiritual intelligence, which connects humans to a higher purpose, plays a pivotal role in this process. The Sense of Life aligns with empathy, connection, and harmony with all sentient beings, the environment, and the universe.

### **1.2 The Sense of Death: A Complementary Parameter**

Acknowledging mortality provides a powerful counterbalance to the Sense of Life. The awareness of impermanence generates appreciation for each moment, motivating individuals to live fully and intentionally. This perspective enhances mental well-being, gratitude, and prioritization of meaningful experiences.

### **1.3 The Concept of "Infinitando"**

The concept of Infinitando describes the perpetual expansion of existence, similar to the infinite growth of numbers and the universe itself. Rooted in Aristotle's potential infinity and formalized through Georg Cantor's transfinite numbers, Infinitando offers a philosophical and mathematical understanding of existence. This process symbolizes humanity's journey toward transcendence while acknowledging its limitations in reaching absolute infinity.

The synergy of the Sense of Life, Sense of Death, and Infinitando provides a transformative lens for health, fostering humility, peace, and spiritual growth. Together, these principles redefine health as a multidimensional state that honors both human finitude and infinite potential.



## **Part II: Alternative Methodologies in Health Education and Humanization**

### **2.1 Art as a Tool for Humanization in Health**

Art has emerged as a powerful methodology for humanization within healthcare systems. By integrating artistic practices such as storytelling, dance, poetry, and performance, healthcare professionals can address emotional and psychological dimensions of health. Art mobilizes positive emotions, reduces stress, and promotes healing, particularly in hospital environments.

Example: The Tent Circus Telethon Project at AACD (2012-2018), Latin America's largest hospital for children with disabilities, successfully implemented storytelling workshops and artistic performances. These initiatives not only enhanced patient well-being but also transformed hospital environments into spaces of compassion and joy.

### **2.2 Methodology for Implementation**

A comprehensive framework for humanization in healthcare includes:

- Workshops for healthcare professionals and volunteers: Focused on empathy, storytelling, and creative arts.
- Practical sessions: Incorporating music, puppetry, movement, and visual arts to engage patients and caregivers.
- Cultural interventions: Artistic performances in hospitals and clinics to improve emotional health and social cohesion.

Case Study: Anjos da Saúde Project (1999-2002), implemented in partnership with local health authorities in Limeira, Brazil, showcased the transformative power of volunteer-driven art and storytelling in improving patient recovery and fostering community resilience.

## **Part III: The Open University Humaniza and Case Studies**

The Open University Humaniza has been at the forefront of education and health humanization, developing projects that integrate art, empathy, and education:

1. Humanization Program at Santa Casa de Misericórdia (1997): Initiated through the Libertadores do Riso group, which continues to serve as a model for humanized healthcare.
2. National and International Collaborations: Contributions to the 16th International Leprosy Congress and partnerships with MORHAN (Movement for the Reintegration of Persons Affected by Leprosy).
3. Training Multipliers in Health Education: Structured workshops aimed at developing humanized storytelling and art programs for healthcare professionals and volunteers.

## Conclusion

This paper advocates for a transformative shift in healthcare paradigms through the integration of the Sense of Life, Sense of Death, and the concept of Infinitando. By embracing holistic, humanized methodologies, including art and storytelling, healthcare systems can address physical, emotional, and spiritual dimensions of health. The Open University Humaniza serves as a beacon of innovation, demonstrating the practical impact of humanization programs in improving healthcare outcomes and fostering community well-being. Reimagining health through this philosophical and compassionate lens enables society to align with a deeper, infinite purpose while honoring the human condition.

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## Appendix: Training Proposal for Storytelling-Based Humanization in Health

Terms of Reference

**Object:** Training for Health Education and Humanization Multipliers through Storytelling.

Target Audience: Healthcare professionals, hospital educators, pedagogical staff, and volunteers in multidisciplinary health teams.

**Justification:** This continuing education program aims to sensitize and train professionals working in healthcare by applying storytelling methodologies with a humanized and inclusive focus. Stories play a fundamental role in human life by conveying values, lessons, and reflections. Within hospital settings, storytelling offers moments of relief and connection for patients, caregivers, and healthcare professionals. Through this approach, pain and suffering are mitigated as participants immerse in the beauty and emotional power of stories, poetry, and music.

Storytelling transforms hospital environments by fostering hope, joy, and affectivity among patients, staff, and families. This program trains multipliers to integrate storytelling into healthcare to enhance patient recovery, strengthen interpersonal relationships, and support holistic healing.

**Activities:**

- Training workshops
- Story production
- Final storytelling performance

**Methodology:**

- Interactive reflections, group discussions, and practical exercises
- Storytelling techniques: voice training, body expression, puppet manipulation, and musicalization
- Development of costumes and storytelling resources

Duration: Three (3) modules of three hours each, facilitated by two Humaniza trainers.

Participants: Up to 25 professionals/multipliers.

Flexibility: The program will adapt to the team's needs and context.

**“To humanize is to see, feel, and act with the heart.”(Vicente-Pessoa)**

**APPENDIX II: CASE STUDY – PROJETO ANJOS DA SAÚDE-2000 YEAR****Name of Project:** Anjos da Saúde**Author:** Vicente Pironti**Summary:**

Anjos da Saúde was inspired by a metaphorical "planet" called Flor Oceânica, the birthplace of joyful beings known as Clown Angels. These angels brought humor, love, and compassion to healthcare units in Limeira, transforming stressful environments into spaces of joy, meditation, and celebration.

**Location:** Limeira, São Paulo, Brazil**Institution Type:** NGO (Grupo Aldeia) and Municipal Health Department Partnership**Implementation Date:** March 2000**Duration:** March to July 2000 (Phase 1)**Target Population:** Agents, healthcare users, and administrative staff of healthcare units.**Objectives:**

- Develop interpersonal relationships and self-awareness.
- Strengthen volunteer initiatives.
- Promote holistic health concepts.
- Integrate local communities and healthcare environments.

**Methodology:**

- Playful and therapeutic interventions.
- Community mobilization and meditation practices.
- Capacitation workshops to train volunteers and staff.

**Strategy:**

The project was inspired by the solidarity and compassion exemplified by Clarinha and Chiquinho de Assis. Their lives demonstrated the power of collective action and love in transforming communities. Key strategic partnerships included:

- **ARRICIRCO-Limeira:** A project using circus arts to empower excluded youth.
- **Programa Voluntários de Limeira:** Provided volunteers and training support.
- **Secretaria Municipal de Saúde de Limeira:** Supported structural planning and logistics.
- **Grupo Aldeia Movimento Pró-Cultura:** A cultural organization renowned for harmonizing management efficiency with compassionate action.

**Costs/Financing:**

- Honoraries and operational expenses (March–July 2000).
- Capacitation in integrated breathing techniques.
- Volunteer labor: Included artists, producers, and philosophers, contributing immeasurable value.

**Results:**

- Enhanced humanization in healthcare services.
- Reduction in healthcare worker stress through therapeutic practices.
- Sustained activities post-intervention, as healthcare units adopted exercises for staff well-being.

**Future Perspectives:**

The project's success in Limeira drew national recognition, including support from the Secretaria Nacional de Políticas da Saúde and partnerships with similar initiatives. Expansion plans include outreach to nearby cities and replication across Brazil.

**Appendix III: Television and Social Mobilization**

Between 2012 and 2018, the Open University Humaniza participated in a pioneering project in partnership with the AACD, the largest hospital in Latin America specializing in the treatment of children and people with physical disabilities. This initiative brought art workshops that culminated in Inclusive Art Shows, featuring Circus Art, Poetry, Music, Plastic Arts, and Painting.

These workshops were showcased during Brazil's largest social mobilization event, the TELETON program. Originally created by actor Jerry Lewis in 1966, TELETON was adopted in Brazil by AACD and reaches millions of viewers every year, promoting awareness and raising funds for disability treatment.

**Highlights of the Project:**

- Art workshops for children and adults with disabilities.
- Inclusive Art Shows presented live during the TELETON program.
- National social mobilization through Brazil's leading television network, SBT.

**Journalistic Reports:**

- **2014 Edition (SBT Studios):**
  - Report 1
  - <https://youtu.be/QqHX6x8isQw>
  - Report 2
  - <https://youtu.be/sx6rqlKDwRQ>
- **2015 Edition (SBT Studios):**
  - Janela Cultural ¼

- <https://www.youtube.com/watch?v=kPsYHS2xXfU>
- Janela Cultural 2/4
- <https://www.youtube.com/watch?v=HjI9jir7W5c>
- Janela Cultural 3/4
- <https://www.youtube.com/watch?v=23tc01BWsRw>
- Janela Cultural 4/4
- [https://www.youtube.com/watch?v=05dVD\\_kV20c](https://www.youtube.com/watch?v=05dVD_kV20c)

This project demonstrated the power of art and media to foster social inclusion, empathy, and community mobilization on a national scale.

## ASAVIKA SCIENCE: THE CONJUNCTION OF THE INFINITE AND THE FINITE – WINGS FOR THE EVOLUTIONARY POTENTIAL OF THE HUMAN SPIRIT

**Name: Dr hc Vicente Pironti**

**AFFILIATION: OPEN UNIVERSITY HUMANIZA**

Prof. Dr.h.c. Vicente Pironti(FMERU&FMERC), Doctor Honoris Causa(IBERO—IBAM UNIVERSITY) and POST DOCTORATE FELLOW OF EUDOXIA UNIVERSITY(FMERU&FMERC), Founder of the Humaniza network, is recognised and specialised in (INVENTING SOCIAL TECHNOLOGIES) Site:

[www.humaniza.com.br](http://www.humaniza.com.br) Address: **Street Albino Buzolin 03, Jardim Santo André, Limeira City, São Paulo State, Brazil Country** Email: [vicentepironti@gmail.com](mailto:vicentepironti@gmail.com) / [pironti@humaniza.com.br](mailto:pironti@humaniza.com.br)

**Abstract:**This thesis introduces and develops the concept of ASAVIKA Science, a pioneering framework that bridges the finite and the infinite to awaken the infinite potential of the human spirit—a continuous process termed Infinitando. Inspired by the transformative philosophies of Hannah Arendt and Pierre Bourdieu, it seeks to confront dehumanizing indifference and social stagnation, promoting empathy, compassion, and collective evolution as a unified human family. The research incorporates interdisciplinary methodologies, combining storytelling, chess as a metaphor for human transformation, and art as tools for fostering social cohesion and personal growth. **Key propositions include:**a)**Philosophical Integration:** Drawing on Arendt’s call for humanization and Bourdieu’s praxis of thought transforming social realities, the thesis reimagines societal structures, emphasizing the importance of reflective and actionable empathy.b)**Pedagogical Framework:** Through storytelling, chess, and collective artistic creation, the project engages refugees, immigrants, and marginalized communities in an inclusive process of transformation. Artistic narratives of overcoming hardships are harnessed to inspire societal solidarity.c)**Chessboard of Hope(book):** Chess serves as an archetype of life’s decisions and human transformation. The thesis envisions it as a platform for world leaders, families, and communities to resolve conflicts peacefully, fostering mutual respect and understanding.d)**Empirical and Social Applications:** The study designs and evaluates projects that integrate art, storytelling, and competitive sports to create inclusive spaces. These initiatives target refugees and immigrants, aiming to restore dignity, generate sustainable livelihoods, and inspire a global culture of peace. **RESULTS:** a)Creation of international storytelling contests to amplify the voices of refugees, culminating in cultural products that sustain impacted communities.b)Development of therapeutic and artistic storytelling programs that foster resilience and interconnectivity among participants.c)Establishment of social and educational technologies to promote scalable public policies and practices based on generosity and shared humanity.d)Proposal for a technological application that disseminates stories and cultural products from marginalized communities to facilitate global engagement and support. **Conclusion:** ASAVIKA Science and the Chessboard of Hope offer a



transformative lens for reimagining humanity's trajectory. By inspiring reflective practices and cultivating connections through art, chess, and storytelling, this thesis envisions a path where humanity transcends its historical cycles of conflict, choosing instead to celebrate its shared infinite potential. The game, as Mathpoetry poetically suggests, must go on—not as a struggle, but as a testament to the resilience and unity of the human spirit. **Keywords:** ASAVIKA Science, Infinitando, Hannah Arendt, Pierre Bourdieu, empathy, storytelling, chessboard of hope, refugee integration, infinite potential, human evolution.

- **Introduction**

From the dawn of humanity, we have sought answers about our origins and purpose. While these questions remain enigmatic, this thesis proposes a possibility: "We come from the Infinite and are Infinitando to return to the Infinite."

ASAVIKA Science emerges from this vision, aiming to harness the collective potential of humanity and all sentient beings. Central to this framework is the integration of the infinite and finite dimensions of existence, creating avenues for compassionate systems across artificial intelligence, economics, education, and governance. This study explores how empathy can be programmed into AI to ensure that autonomous systems act with compassion toward their creators. By aligning the finite constraints of human consciousness with the infinite depths of the subconscious, ASAVIKA Science posits a roadmap for addressing humanity's most pressing challenges.

- **The Manifesto of ASAVIKA Science**

ASAVIKA Science prioritizes the transformation of reality, recognizing society as the ultimate laboratory for this endeavor. This perspective, rooted in a profound sense of humility, acknowledges our interconnectedness and the critical need to cultivate a culture of generosity. Indifference, as examined by Hannah Arendt during the Holocaust, is identified as a more devastating force than radical evil, underscoring the necessity for human empathy and action.

With nearly 2 billion individuals in multidimensional poverty and another billion at risk, the urgency for collective solutions becomes evident. Refugee crises in Syria, Gaza, and Ukraine exemplify the need for interventions that foster dignity, sustainability, and global solidarity.

- **Research Objectives**

1. To integrate compassion into AI algorithms, aligning machine autonomy with ethical considerations.
2. To utilize storytelling and chess as tools for psychological and societal transformation.
3. To establish scalable social technologies that address poverty, displacement, and conflict through education, art, and cooperative efforts.

#### 4. To Align the Finite Constraints of Human Consciousness with the Infinite Depths of the Subconscious

- **Research Objectives**

- **Objective 1: To Integrate Compassion into AI Algorithms**

This objective focuses on embedding ethical considerations and compassion into artificial intelligence (AI). By designing algorithms capable of understanding and acting with empathy, ASAVIKA Science envisions a future where AI systems align their autonomy with human values.

- **Key Strategies:**

- Develop machine learning models that incorporate emotional intelligence, enabling AI to recognize and respond to human emotions.
- Collaborate with interdisciplinary teams of ethicists, technologists, and sociologists to define parameters for compassionate decision-making.
- Create AI systems that prioritize the well-being of vulnerable populations, particularly refugees and displaced individuals.

- **Anticipated Outcomes:**

- Reduction in algorithmic bias and enhanced trust in AI systems.
- Development of tools that assist humanitarian organizations in crisis management and resource allocation.
- Promotion of ethical AI standards across industries.

- **Objective 2: To Utilize Storytelling and Chess as Tools for Psychological and Societal Transformation**

Storytelling and chess are powerful tools for fostering psychological resilience and societal cohesion. This objective seeks to harness their potential as mediums for education, therapy, and community building.

- **Key Strategies:**

- Establish storytelling workshops for refugees and marginalized groups to document and share their experiences, fostering a sense of identity and purpose.
- Use chess as a metaphorical framework to teach decision-making, problem-solving, and conflict resolution.
- Create interactive programs combining storytelling and chess to engage families, communities, and policymakers in meaningful dialogue.

- **Anticipated Outcomes:**

- Enhanced psychological well-being and self-efficacy among participants.
- Strengthened community bonds through shared narratives and cooperative activities.
- Broader societal appreciation for the transformative power of art and strategy.

-

- **Objective 3: To Establish Scalable Social Technologies**

This objective focuses on developing scalable solutions that address poverty, displacement, and conflict through education, art, and cooperative efforts. By leveraging digital platforms, the aim is to create accessible and sustainable tools for social impact.

- **Key Strategies:**

- Design apps that enable refugees to access resources, connect with support networks, and share their stories.
- Develop platforms for animated storytelling, transforming personal histories into engaging digital narratives.
- Introduce virtual chess tournaments and educational games that promote critical thinking and cross-cultural understanding.

- **Anticipated Outcomes:**

- Increased accessibility to education and resources for marginalized communities.
- Creation of economic opportunities through the production of cultural and digital content.
- Global dissemination of inclusive practices and policies.

- **Objective 4: To Align the Finite Constraints of Human Consciousness with the Infinite Depths of the Subconscious**

This objective seeks to explore and develop AI systems that facilitate a deeper connection between conscious thought and subconscious potential, leveraging this alignment to address humanity's complex challenges.

- **Key Strategies:**

- Design AI-driven tools that analyze subconscious patterns and translate them into actionable insights for personal and societal growth.
- Develop immersive platforms that use AI to simulate scenarios fostering creative problem-solving and introspection.
- Collaborate with neuroscientists and psychologists to integrate findings on subconscious influence into AI models, enhancing decision-making processes and emotional intelligence.

- **Anticipated Outcomes:**

- Enhanced capacity for individuals and communities to tackle multidimensional challenges through AI-assisted subconscious alignment.
- Creation of therapeutic applications that help individuals unlock their potential by reconciling conscious and subconscious motivations.
- Development of societal frameworks where AI-driven insights inform policies, education, and conflict resolution strategies.

- **Integration of Objectives**

To achieve synergy among the four objectives, ASAVIKA Science proposes a comprehensive strategy that unites technology, art, and ethics:

- **Unified Platform Development:** Create a multifaceted app integrating all four objectives. Features could include:
  - AI-powered emotional support and resource navigation for refugees.
  - Interactive storytelling modules where families can create animated videos of their journeys and aspirations.
  - Chess-based learning games to foster strategic thinking and resilience.
  - Tools to explore subconscious patterns, aligning them with conscious goals for holistic development.
- **Collaborative Ecosystems:** Partner with NGOs, governments, and private sectors to implement these tools on a global scale. Encourage cross-sector collaboration to ensure sustainability and scalability.
- **Feedback and Iteration:** Regularly evaluate the impact of these technologies through user feedback and adapt them to meet evolving needs.

By interweaving compassion, creativity, and strategy, this integrated approach aims to transform individual lives and foster a collective sense of humanity, ensuring a brighter, more inclusive future for all.

- **Integration of Objectives**

To achieve synergy among the three objectives, ASAVIKA Science proposes a comprehensive strategy that unites technology, art, and ethics:

- **Unified Platform Development:** Create a multifaceted app integrating all three objectives. Features could include:
  - AI-powered emotional support and resource navigation for refugees.
  - Interactive storytelling modules where families can create animated videos of their journeys and aspirations.
  - Chess-based learning games to foster strategic thinking and resilience.
- **Collaborative Ecosystems:** Partner with NGOs, governments, and private sectors to implement these tools on a global scale. Encourage cross-sector collaboration to ensure sustainability and scalability.
- **Feedback and Iteration:** Regularly evaluate the impact of these technologies through user feedback and adapt them to meet evolving needs.

By interweaving compassion, creativity, and strategy, this integrated approach aims to transform individual lives and foster a collective sense of humanity, ensuring a brighter, more inclusive future for all.

- **The Chessboard of Hope: A Pedagogical and Metaphorical Framework**

- The Mathematics of Chess
- Chess symbolizes the archetypal struggle of human existence, reflecting decisions, transformations, and the interplay between shadow and light. Drawing from Carl Jung’s theories of archetypes, John Nash’s game theory, and Edward Lorenz’s chaos theory, this thesis posits that chess serves as a universal metaphor for conscious evolution.
- Key Premises
- Chess reflects Jungian archetypes, shaping individual and societal experiences.
- Conscious engagement with chess fosters self-awareness, enhancing decision-making and transforming shadow aspects into forces of light.
- Nash’s game theory and Lorenz’s chaos theory illuminate chess as a model for strategic interaction and unforeseen consequences.
- Practical Applications
- **Storytelling as Transformation:** Integrating storytelling into refugee programs fosters emotional resilience and preserves cultural identities. Projects like "The Chessboard of Hope" and "The Flower is a Mirror—Reflecting Love" employ art and narrative to inspire collective healing. This integration builds on the interdisciplinary insights of Dr. hc Vicente Pironti’s scientific thesis, *The Reflection of Love and Infinite Expansion: A Study of Literature, Cosmology, Quantum Physics, and Sociology Through "The Flower is a Mirror—Reflecting Love"*. Pironti’s exploration highlights how love and compassion act as metaphysical constants, akin to reflective properties of light in quantum physics and infinite expansion in cosmology. The play’s transformative themes amplify the impact of storytelling as a pedagogical and therapeutic tool.
- **Educational Technologies:** Social and educational innovations based on chess and storytelling empower marginalized communities, offering pathways for sustainable livelihoods and societal inclusion.
- **Conclusion**
- ASAVIKA Science stands as a transformative framework for understanding and enhancing the human experience. By uniting the infinite and finite, the thesis challenges us to reimagine societal structures and individual roles within them. The integration of storytelling, chess, and compassionate AI serves as a catalyst for collective evolution, fostering a global culture of peace and generosity. As envisioned, the Chessboard of Hope becomes a stage where humanity’s infinite potential unfolds, illuminating paths toward unity, resilience, and shared purpose.
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- **Introduction: The Chessboard of Hope**

This small book is a call to the hope that resides within all of us! We may gain everything, but if we lose hope, we will have nothing. We may lose everything, but if hope remains with us, we will have everything in our favor!

The Chessboard of Hope is a sign—a small light that can guide us through the darkness of this world, a world in the process of illumination and evolution. It is also a flame that can clarify who we are and what our purpose is here on Earth.

It offers a possibility: the chance to mobilize for world peace by starting with our own inner world, generating the dignity of self-confidence for those living in subhuman conditions, and rewarding us with the sweet perfume of generosity. This is a fragrance that clings to the hands and hearts of those who give their love and attention to others.

This work is based on a scientific thesis "The Mathematics of the Chess Game as an Archetype of Human Transformation!" that has already been presented at international congresses and published in the global scientific system. Intentionally, it has been written in a language suitable for children and young adults, so it is accessible to readers of all ages. Yet it requires attention, for while it is cheerful and easy to understand, it is also deep and philosophical.

This is a checkmate to despair! And on this chessboard, the winner is always humility—just as it is in life. Believe it...

**With Love:** The Author-Dr hc Vicente Pironti

- **APPENDIX PLAY—"The Chessboard of Life"**

- **Chapter One: The Game Begins**

"You can't be serious, Grandpa. You really think chess is about... life?" Marco wrinkled his nose as he studied the chessboard between them. The pieces sat neatly arranged, as if waiting for battle. To Marco, they were just wood and plastic. Kings, queens, pawns—whatever. He was more interested in the blinking notifications on his phone than in some old-fashioned board game.

"Not just life, kiddo," Grandpa said, sliding a pawn forward with a creaky but deliberate hand. "Chess is about everything. Life, decisions, even how the universe works. It's all right here on this board."

Marco groaned. "Mom, Dad, can you please tell Grandpa I'm not a philosopher?"

His mom chuckled as she leaned against the doorframe, drying a dish. "I don't think you need to be a philosopher, Marco. Chess teaches you how to think. Your grandpa has a point."

"Finally! Someone sees my genius," Grandpa said with a twinkle in his eye.

"Chess is more than just a game, Marco," his dad added, setting his coffee cup on the table. "Did you know there are people who write entire books and theses about what chess can teach us about life?"

Marco rolled his eyes. "Oh great. You mean, like... homework disguised as fun?"

"Not homework," Mom said, sitting down at the table beside him. "It's storytelling. Chess is full of stories. Let's say every piece on this board is a part of you—your strengths, your weaknesses, the parts of yourself you don't even realize exist yet."

Marco raised an eyebrow. "Are you telling me that little pawn is me? No offense, but pawns are kinda lame."

"Not lame," Grandpa corrected, tapping the top of the pawn with his finger. "This little guy is braver than he looks. The pawn starts out small and weak, sure. But if he keeps going, step by step, he can cross the whole board and become a queen. Or a knight. Or anything, really."

"Okay, so it's a rags-to-riches story," Marco said, smirking. "Big deal."

His dad shook his head. "Not quite. It's not just about what you become. It's about how you choose. That pawn has to make a lot of decisions along the way—just like you do in life. Every move you make affects what happens next."

Marco leaned back in his chair, folding his arms. "So you're saying chess is like... my life in mini version?"

"Yes!" Grandpa said, his eyes gleaming. "Exactly. Except it's also like everyone else's life too. That's the genius of it. It's all about choices, Marco. Every move matters. That's why some smart folks think chess is a perfect metaphor for human transformation."

"Transformation?" Marco repeated, his interest piqued despite himself. "What's that supposed to mean?"



Grandpa rubbed his hands together. “Now we’re getting somewhere. Let me tell you a story. Picture this: a long time ago, in a kingdom ruled by light and shadow—”

“Uh-oh,” Marco interrupted. “Is this going to be one of those weird Grandpa stories that don’t make sense?”

“Marco,” Mom scolded gently, though she was smiling.

Grandpa ignored him. “—there lived a king and queen who protected their people. They ruled over knights, bishops, rooks, and pawns. But there was one big problem. They were at war... not just with another kingdom, but with themselves.”

Marco frowned. “Wait, how can they be at war with themselves?”

“Ah, now that’s the question, isn’t it?” Grandpa leaned forward conspiratorially. “You see, kiddo, every piece on this board is part of you. The king? That’s your sense of self—the part of you that everything else revolves around. The queen? She’s your creativity, your intuition. The knights? They’re your cleverness, the way you leap over problems. And the pawns? They’re your small, everyday choices. The parts of you you think aren’t important but actually hold the most potential.”

“So, if they’re all me,” Marco said slowly, “then who’s the enemy?”

“The enemy,” Dad said, tapping his temple, “is your shadow.”

“My shadow?”

Mom leaned closer. “Your shadow is the part of you that you don’t want to see. The things you’re scared of, or embarrassed by. Maybe it’s your fear of failure, or the way you get angry when something doesn’t go your way. It’s not ‘bad,’ but it’s a part of you. And if you don’t face it, it can control your moves without you even realizing.”

Marco stared at the chessboard. The black pieces glinted under the light. “So... the black pieces are the shadow?”

Grandpa grinned. “Sometimes. But it’s not so simple, Marco. The black pieces aren’t evil. They’re just the other side of you. The trick is to learn how to work with them—to understand them.”

“And if I don’t?”

“Well,” Grandpa said, moving his bishop to take one of Marco’s pawns, “then they take over your game.”

- **Chapter Two: Pawns and Possibilities**

The next evening, the whole family gathered around the chessboard. Marco sat in his usual spot, but this time he was paying closer attention. Grandpa and Dad had set up a scenario: Marco was playing as white, with only a few pieces left on the board. He had a single pawn, a rook, and his king. Grandpa was playing black, with a queen and two pawns advancing toward victory.

“Okay, Marco,” Dad said, pointing at the board. “This is where chess gets interesting. You’re in a tough spot. What’s your move?”

Marco scratched his head. “I mean... I guess I could move my rook here? But then his queen will—”

“Stop,” Mom interrupted. “Don’t just think about the next move. Think three moves ahead. What happens after Grandpa’s queen moves? And after that?”

Marco frowned, leaning closer to the board. For the first time, he noticed something: if he moved his rook to block the queen, Grandpa’s pawn would advance. But if he moved his pawn instead...

“Wait,” Marco said. “What if I move my pawn here?”

Grandpa’s eyebrows shot up. “Interesting. Why would you do that?”

“Because,” Marco said, a smile spreading across his face, “if you take the pawn, my rook will move here, and then your queen is trapped.”

Grandpa let out a delighted laugh. “Now you’re getting it! You sacrificed a small piece to gain a bigger advantage. That’s the kind of thinking that changes the game.”

Marco’s dad leaned back in his chair, smiling. “And that’s the beauty of chess—and life. Sometimes you have to give something up to move forward. The trick is knowing when and why to do it.”

### ● Chapter Three: The Shadow on the Board

The next day, Marco found himself staring at the chessboard once more. This time, he wasn’t so sure about his moves. It was like his mind was starting to look at the game through a new lens. He could almost feel the pieces shifting beneath his fingers, like each one was quietly whispering its story.

Grandpa had explained earlier that every piece on the board represented something important within him. The king was his sense of self. The queen, his creativity. The knights, his ability to adapt. But Marco had been wondering about the shadow pieces—the ones that weren’t as easy to understand. The black pawns. The dark queen.

“So, Grandpa,” Marco said, tapping a black pawn on the board with his finger, “you said the shadow is part of me, right? Like, it’s stuff I don’t want to face?”

Grandpa nodded. “Exactly. We all have a shadow. It’s the part of you that hides in the dark corners of your mind. It’s not bad—it’s just the stuff you don’t like to look at. But if you avoid it for too long, it starts to control your moves. The trick is facing it.”

Marco scrunched his face. “But how do you even face it? It’s... kinda scary, right?”

“Well,” Grandpa began slowly, “have you ever been in a game where you were losing, and you could feel that little voice in your head saying, ‘There’s no point, you might as well give up’? That voice is part of your

shadow—the part that tries to keep you safe by telling you to avoid risk. But if you listen to it all the time, you’ll never grow.”

Marco stared at the chessboard, trying to imagine that voice. The one that always whispered, “It’s too hard.” He had heard it plenty of times before, whether it was about a math test, a basketball game, or even trying to talk to someone new. But now that he thought about it, every time he listened to that voice, he got stuck. And every time he ignored it, he did better.

He looked at the black queen across the board, sitting menacingly next to his king. “So, the shadow is like... the opponent? The one that challenges you, but also helps you grow?”

Grandpa smiled proudly. “Exactly. The black pieces are the challenge, Marco. They test your limits. But if you can learn how to work with them, instead of running from them, you can make them work for you.”

Marco took a deep breath and slid his queen across the board, now just a few spaces from the black queen. “Okay, let’s do this. I’m not backing down anymore.”

#### ● **Chapter Four: The Dance of Strategy**

The game was getting more intense, but Marco didn’t mind. He was starting to think differently about his moves. Each time Grandpa made a clever play, Marco didn’t just feel frustrated—he felt curious. What could he learn from this? What was his next step going to teach him about himself?

“You’re doing well, Marco,” his dad said, sitting back in his chair with his arms folded. “But now, I want you to think about something else. Have you ever heard of a strategy called ‘sacrifice’?”

Marco paused. “Like giving something up on purpose?”

“Exactly,” Grandpa said. “In chess, sometimes you give up a piece to gain a bigger advantage. It’s not always about holding onto every little thing—it’s about knowing what’s worth keeping and what’s worth letting go.”

“That sounds... hard,” Marco said. “What if I end up losing everything?”

“Then you learn from it,” his dad said with a grin. “In chess, you don’t just learn how to win—you learn how to lose. The game teaches you how to deal with consequences.”

“But what if you give up something and it’s the wrong thing?” Marco asked, looking at the board with worry.

“Good question,” Grandpa said, tapping his chin thoughtfully. “That’s where awareness comes in. Every move you make should be a conscious decision, not just a reaction. Think ahead. What will your sacrifice mean for the future of the game? And more importantly, what does it mean for your growth?”

Marco thought about it. He thought about the times in his life when he felt pressured to give up something—like trying to play it safe at school, or not asking questions when he didn’t understand something. But he also

remembered how, every time he took a risk, it paid off in some way. Maybe it wasn't instant, but it taught him something he wouldn't have learned if he'd played it safe.

“So, it's like life, then,” Marco said slowly. “You don't just hang on to what's comfortable—you take chances, and sometimes you have to give up things to grow.”

Grandpa leaned back and smiled. “Exactly. And those sacrifices? They're just like moves on a chessboard. They might seem risky, but if you're aware of them, they lead you to the next level.”

- **Chapter Five: The Butterfly Effect**

A week passed, and Marco's thinking about chess—and about life—was starting to shift. He was paying more attention to his moves, not just in the game, but in the way he made decisions in real life.

One afternoon, he was sitting in his room, staring at his homework. It was the same math test he'd been dreading all week. Normally, he would've been staring at his phone, trying to find any distraction he could. But today, something was different. He took a deep breath and thought about the lesson from chess.

“You can't just react,” he muttered to himself. “You've got to think ahead. Every decision matters.”

He remembered a conversation he'd had with Grandpa about the chaos theory. Grandpa had explained that small decisions in life—like the move of a single chess piece—could set off a ripple effect, leading to big changes.

“You ever heard of the butterfly effect, Marco?” Grandpa had asked. “It's the idea that small actions can have huge, unpredictable consequences.”

“Like how my move in chess could change the whole game?” Marco had said.

“Exactly,” Grandpa had grinned. “A single move—whether it's on the chessboard or in life—can have far-reaching effects. But to make the best move, you have to trust that every choice, big or small, counts.”

Marco stood up from his desk, feeling the weight of the decision. He wasn't going to procrastinate. He wasn't going to get distracted. This was his move, his chance to take control. So he got to work.

- **Chapter Six: The Final Checkmate**

It was another evening around the chessboard. Grandpa had been pushing Marco's skills further, and tonight, they were playing a real match. Grandpa was calm as ever, but Marco could feel the tension building in his chest. His queen was under threat from Grandpa's knight, and his king was cornered.

"Okay, Marco," Grandpa said, eyes gleaming with the thrill of the game. "What's your move?"

Marco's heart raced. He stared at the board, feeling the weight of every piece. The black knight. His own king. The queen. The pawns. His mind started to race—there were so many possible moves, so many ways this could end. But then, he remembered what his dad had told him: Think ahead.

Marco made a daring move, sacrificing his queen to clear a path for his pawn. It was a risk, but it was the right one.

Grandpa raised his eyebrows, impressed. "Well, now. That's a bold move."

Marco grinned. "Sometimes, Grandpa, you have to take risks."

"True," Grandpa said, nodding in approval. "And sometimes those risks pay off in ways you don't expect."

Marco's pawn advanced across the board. The final checkmate was imminent. Grandpa's king was trapped.

"Well played," Grandpa said, shaking his head in awe. "You've learned the most important lesson of all: Life, like chess, is about making choices. Big, small, and sometimes risky ones."

Marco smiled, feeling a sense of pride wash over him. "It's not just about winning. It's about the moves you make—and how you learn from them."

### **Reflection**

In this expanded version, we dive deeper into the philosophical aspects of the thesis, including Jungian psychology (the shadow), the importance of conscious decisions (sacrifices), and the butterfly effect/chaos theory. These ideas are woven into Marco's real-life experiences, where his journey through the chess game mirrors his growth as a person. The characters use storytelling and thoughtful explanations to guide Marco (and readers) through these complex concepts in a relatable and engaging way.

- **Chapter Seven: A Dream of Shadows**

That night, Marco had a dream. He was standing on a giant chessboard that stretched endlessly in all directions. The pieces weren't wooden or plastic anymore—they were alive. The pawns marched in orderly rows, their small faces etched with determination. The knights leapt gracefully across the board, their armor shining. The queen moved like a dancer, her every step commanding power.

And then, out of the mist, the black pieces began to move. The opposing queen emerged first, her shadowy form flowing like smoke. The black king loomed in the distance, his face hidden beneath a dark hood. The pieces marched forward, and Marco felt his stomach twist.

“You’re scared again.”

The voice startled him. He turned to see Grandpa standing beside him, dressed in robes that shimmered like sunlight on water. He was holding Marco’s white king, its golden crown gleaming.

“Grandpa?” Marco asked. “What are you doing here?”

Grandpa smiled. “This isn’t just my dream, kiddo. It’s yours. This is what your shadow looks like.”

Marco looked back at the dark pieces. They were moving closer, surrounding him. He felt the same panic he’d felt during his chess game earlier that day—the fear of making the wrong move, of losing everything.

“I don’t know what to do,” Marco admitted. “They’re stronger than me.”

Grandpa placed a hand on Marco’s shoulder. “They’re not stronger. They’re just the parts of you you haven’t faced yet. Remember, Marco, the shadow isn’t your enemy. It’s a part of you.”

Marco hesitated. “So... how do I beat it?”

“You don’t,” Grandpa said. “You work with it. Watch.”

He waved his hand, and the black queen transformed into Marco’s reflection. Her shadowy face shimmered and became clear—it was Marco, but older, with sharper eyes and a confident smile.

“That’s you,” Grandpa said. “Or at least, it’s the version of you waiting to emerge. If you’re willing to take the next step.”

“The next step?” Marco asked.

“Integration,” Grandpa said. “It means understanding the shadow instead of running from it. Every fear, every mistake—it’s all part of who you are. And when you stop fighting it, you grow stronger.”

The dream began to fade, but not before Marco reached out to touch his shadow’s hand. As their fingers met, the black and white pieces on the chessboard dissolved into light.

### **Chapter Eight: Archetypes on the Board**

The next morning, Marco woke up with a strange mix of excitement and unease. He couldn’t shake the dream—or Grandpa’s words. After breakfast, he dragged the chessboard back to the dining room and set it up again.

His mom walked in, carrying a basket of laundry. “Playing solo?” she asked.

“Sort of,” Marco said, lining up the pieces. “Mom, do you think every piece on the board really has, like, a meaning?”

“Absolutely,” she said, sitting down across from him. “Want to break it down?”

Marco shrugged. “Sure. Why not?”

“Okay.” She pointed to the **king**. “Let’s start here. The king is your self. It’s the core of who you are. Everything else—your strengths, weaknesses, and even your mistakes—revolves around it. That’s why the king doesn’t move much. He’s slow, but if you lose him, the game’s over.”

“So, protect the king,” Marco said.

“Exactly. But protecting him doesn’t mean hiding him away,” she added. “You have to let him be part of the game. If you’re too scared to use him, you’ll lose anyway.”

Marco nodded. “Okay, so what about the queen?”

Mom smiled. “The queen is your creativity. She’s powerful because she’s flexible. She can go anywhere, do anything. But if you rely on her too much, you lose balance. The queen might be strong, but even she can’t win without help.”

Marco thought about that. “So... I can’t win just by being creative. I need strategy too.”

“Exactly,” Mom said, pointing to the **rooks**. “The rooks are your sense of structure and logic. They’re the foundation of your plans. They might not be as flashy as the queen, but they’re essential for keeping order.”

Marco picked up one of the rooks. “Okay, that makes sense. What about the knights?”

“The knights are the problem-solvers,” Mom said. “They think outside the box. They don’t move in straight lines like the rooks and bishops—they leap over obstacles. They remind you to stay flexible when things don’t go as planned.”

“And the bishops?” Marco asked.

“The bishops are your intuition,” she said. “They move diagonally, cutting across the board in unexpected ways. Where the rooks are logical, the bishops rely on instinct. They remind you to trust your gut when reason alone isn’t enough.”

Marco looked at the **pawns**. “And these little guys?”

Mom’s expression softened. “The pawns are your daily habits. They’re small and slow, but they have incredible potential. Every big change starts with small steps, Marco. Don’t underestimate them.”

Marco stared at the board, imagining all the pieces as parts of himself. It was starting to make sense now. “And the black pieces? Are they my shadow?”

“Sometimes,” Mom said. “But remember, the shadow isn’t all bad. It’s just the parts of you you don’t want to face. The trick is to find balance. Light and shadow working together—that’s how you win.”



- **Chapter Nine: Synchronicity**

That afternoon, Marco decided to play another game with Grandpa. This time, though, he approached it differently. He didn't just focus on winning—he thought about what each piece meant, how they worked together.

As the game unfolded, something strange happened. He started to notice patterns—not just in the game, but in himself. When he moved a pawn, he thought about the small steps he needed to take in real life, like studying for his math test or practicing soccer drills. When he used the knight, he remembered the times he'd found creative solutions to problems, like fixing his broken bike with duct tape and a paperclip.

Halfway through the game, Grandpa leaned back and smiled. “Do you know what you're doing, Marco?”

“Trying not to lose?”

Grandpa laughed. “More than that. You're finding synchronicity.”

“Synchro-what?” Marco asked.

“Synchronicity,” Grandpa said. “It's a fancy word Carl Jung used to describe meaningful coincidences. It's when things in life seem connected, even if they don't make sense at first.”

Marco frowned. “What does that have to do with chess?”

“Everything,” Grandpa said. “The way you play reflects who you are. The choices you make on the board aren't random—they're a mirror of the choices you make in life. And when you start paying attention, you'll see how everything is connected.”

Marco stared at the board. For the first time, he felt like he wasn't just playing chess—he was learning something bigger. Something important.

- **Chapter Ten: The Final Lesson**

The next week, Marco faced Grandpa in what he called “the ultimate rematch.” This time, it wasn't just a game—it was a test of everything he'd learned. As they played, Marco noticed something surprising: he wasn't afraid of losing anymore. Every move felt deliberate, purposeful. Even when Grandpa took one of his pieces, Marco saw the opportunity hidden in the loss.

When the game ended, Marco's white queen delivered the final checkmate. He leaned back, grinning. “I did it.”

Grandpa smiled. “You sure did. But the real victory, Marco, isn't on the board.”

“What do you mean?”

Grandpa tapped his temple. “The real game is in here. Chess is just a practice run for the choices you'll face in life. Every move you make—from what you say to how you treat people—creates ripples. And every time you face your shadow, you grow stronger.”

Marco looked at the chessboard one last time. He didn't see pieces anymore—he saw possibilities. And for the first time, he understood what Grandpa had been trying to teach him all along.

“Thanks, Grandpa,” he said, reaching out to shake his hand. “For everything.”

Grandpa grinned. “Don't thank me, kiddo. Thank yourself. You're the one who made the moves.”

- **Epilogue: The Infinite Game**

Months later, Marco was sitting at his desk, staring at a blank piece of paper. It was his turn to present something for his school's “Life Lessons” project, and he wasn't sure where to start. Then he glanced at the chessboard on his shelf, and an idea clicked.

He picked up a pen and wrote the title: **“The Chessboard of Life: What a Game Can Teach Us About Who We Are.”**

As he began to write, he smiled. For the first time, he felt like he had something worth sharing.

And just like a pawn taking its first step, Marco knew this was only the beginning of his journey.

Mathpoetry, the chess philosopher says: ‘There are no epilogues, after one game you can always start another, the Game must go on...’

- **Chapter Eleven: From Shadow to Light**

“Grandpa, I think I get it now,” Marco said, staring at the chessboard between them. The game wasn't over yet, but his pieces were in an awkward position. His king was cornered, his queen was under threat, and most of his pawns had been picked off. Still, Marco wasn't frustrated like he used to be. He was thinking, really thinking.

“Oh, you do?” Grandpa asked, his voice teasing but warm.

“Yeah,” Marco said, moving a bishop to block a potential check. “The shadow... all the stuff I'm afraid of, or embarrassed by, or just don't want to deal with—it's not something I'm supposed to fight. I'm supposed to... understand it. Use it. Right?”

Grandpa nodded slowly, his eyes twinkling. “Exactly. And once you understand it, the shadow doesn't control you anymore. You can turn it into something powerful—something useful. You've taken the first step, Marco.”

“Turning shadow into light,” Marco murmured, adjusting the rook on his side of the board. “But what does that even look like?”

“Let me show you,” Grandpa said. He leaned back, hands folded in his lap, as if preparing for a story.

“There was a time,” Grandpa began, “when I wasn't such a wise old man. I was young once—your age, in fact. And like most kids, I was stubborn. I hated losing, especially at chess. I was so determined to win every game that I stopped caring about how I played. I didn't think about strategy or respect. I just wanted to crush my opponents. And you know what happened?”

Marco smirked. “You lost?”

Grandpa laughed. “Oh, I lost all right. But it wasn’t just games I lost. I lost friends too. People stopped wanting to play with me. They didn’t enjoy the competition because I wasn’t humble enough to see chess—or life—as more than just winning.”

Marco frowned. “So what did you do?”

“I learned the hard way,” Grandpa said, his smile softening. “One day, I played against someone who didn’t care about winning at all. A kind old man in the park. He beat me easily, but instead of bragging, he just smiled and said, ‘Good game.’”

Marco raised an eyebrow. “What’s so special about that?”

“It wasn’t what he said—it was how he said it,” Grandpa replied. “I could tell he meant it. He wasn’t just being polite. He wasn’t humble because it was some kind of strategy to make me feel better. He was humble because he truly didn’t see the game as a fight. For him, it was a conversation. A chance to connect. I realized then that I’d been playing chess for the wrong reasons. I wasn’t trying to learn or grow. I was just trying to prove I was better than everyone else. And that’s why I kept losing—not just games, but something bigger.”

Marco was quiet for a moment. “So... you think humility is the answer?”

Grandpa’s smile grew. “It’s more than an answer. It’s the greatest victory you can achieve—because when you’re humble, you stop trying to beat others, and you focus on beating your own ego. That’s how you turn shadow into light.”

- **The Lesson of Humility**

“Let me tell you something,” Grandpa said, his voice steady but deep with meaning. “There’s a Brazilian philosopher named Mathpoetry who said something I’ll never forget:

**'The best strategy!**

**Is to be humble, but never by strategy,**

**because if your opponent senses your sincerity,**

**you will gain a friend, whether you win or lose the dispute!**

**On the other hand, if your opponent isn't humble for a moment,**

**you could surprise him and entangle him in his own presumption**

**of thinking you are incapable of victory, and win the game anyway!**

**To be humble is to beat yourself, to surpass yourself tirelessly and always!**

“Do you know what that means, Marco?”

Marco tilted his head, thinking hard. “I guess... it means humility isn’t a trick or a way to fake being nice. It has to be real, or it doesn’t work.”

“Exactly!” Grandpa said, clapping his hands. “True humility isn’t about making yourself small. It’s about seeing the bigger picture. When you’re humble, you see beyond the game. You see the person sitting across from you. You see how every move—win or lose—connects you to something greater.”

Marco leaned forward. “But what about the part where he says you can ‘surprise your opponent’ if they’re not humble? Isn’t that... sneaky?”

Grandpa chuckled. “Not sneaky—wise. If someone underestimates you because they think you’re weak or incapable, their arrogance blinds them. But your humility keeps you focused. You’re not trying to trick them; you’re just staying true to yourself. And sometimes, that’s enough to turn the game around.”

Marco thought about that. “So humility is about winning the right way—winning against your own fears, not just the other person.”

Grandpa nodded. “Exactly. It’s about mastering yourself. In chess, and in life, the greatest victory isn’t defeating someone else—it’s overcoming your own doubts, fears, and weaknesses. That’s what turns shadow into light.”

- **The Game of Light**

The chess game continued. Marco, now armed with Grandpa’s wisdom, made his moves with a new kind of confidence—not the overconfidence of someone desperate to win, but the quiet confidence of someone who was learning to play with purpose.

At one point, Marco moved a pawn forward, knowing it would likely be captured.

“Interesting,” Grandpa said. “Why that move?”

“It’s not about this move,” Marco said, smiling. “It’s about what happens next.”

Grandpa chuckled. “Ah, you’re learning. Humility in action—you’re sacrificing one small piece for something bigger.”

Sure enough, Marco’s next move trapped Grandpa’s queen. But instead of celebrating or gloating, Marco simply said, “Good game so far.”

Grandpa paused, then smiled. “I see you’re not just playing chess anymore. You’re playing life.”

The game ended a few moves later, with Marco delivering a checkmate. But this time, winning felt different. It wasn’t about beating Grandpa. It was about the journey—the risks he’d taken, the lessons he’d learned, and the way he’d faced his own fears along the way.

“Good game, Grandpa,” Marco said sincerely.

Grandpa stood and shook Marco’s hand. “Good game, indeed. And don’t forget, Marco—chess never ends. The lessons you’ve learned today will show up in the next game, and the next, and the next.”

- **The True Victory**

That night, Marco wrote a note to himself and stuck it to his bedroom wall.

It read:

**“Be humble, not to win, but to grow.**

**When you win, be kind.**

**When you lose, be wise.**

**And always, always play with heart.”**

As he lay in bed, Marco thought about the board, the pieces, and what they meant. He thought about how every game was like life—full of choices, risks, and surprises. And he thought about the shadow, the part of him that was scared of failing.

He smiled to himself. “I think I’m ready for the next game,” he whispered.

Because now, Marco understood the greatest truth of all: humility isn’t just the best strategy. It’s the light that transforms everything—even the darkest parts of yourself.

- **Chapter Twelve: The Chessboard of Peace**

It was a quiet Sunday afternoon, and the family was gathered around the dining room table again. Grandpa was setting up the chessboard, but this time, he wasn’t playing against Marco. Instead, Marco’s mom and dad were facing off, each with a confident gleam in their eyes.

“Okay, this is getting serious,” Marco joked, leaning on the table. “Mom versus Dad. Who’s going to win this epic battle?”

His mom smirked. “It’s not about winning, Marco. It’s about teaching your dad a lesson.”

His dad laughed. “We’ll see about that. I’ve been practicing.”

Grandpa, who was watching the setup like a referee, leaned back in his chair. “You know, this reminds me of something important,” he said.

Marco raised an eyebrow. “Is this going to be another one of your life lessons, Grandpa?”

“Of course,” Grandpa replied, grinning. “And this one’s big. Did you know that chess has been used as a tool for peace? For bringing people together—even enemies?”

Marco frowned. “Wait, what? How does chess stop wars? It’s literally about fighting.”

Grandpa shook his head. “It’s not about the fight, Marco. It’s about the rules, the respect, and the connection. Chess teaches us how to resolve conflict without violence. It’s a way to turn enemies into friends.”

Marco crossed his arms. “How does that work? If people are mad at each other, why would they sit down to play a game?” Grandpa’s eyes twinkled. “Ah, let me explain. Or better yet—let’s talk about a thought from a wise philosopher named Mathpoetry. He said something very powerful:

**'You're angry, sort it out on the board.**

**You're sad, go back to the board.**

**You're happy, go straight to the board.**

**You're lonely, go to the board.**

**You're with several friends, meet on the board.**

**Have you made enemies? Great!**

**Meet on the board and become friends!'**

“Do you see what he’s saying, Marco? The chessboard isn’t just a game—it’s a meeting place. A way to understand each other without words, without weapons, and without hate.”

### **Story of Chess and Peace**

Marco leaned forward, curious. “Okay, Grandpa. I’ll bite. Do you have a story about this too?”

Grandpa nodded. “Of course I do. This one’s about a war that never happened because of chess.”

Marco’s dad paused mid-move. “Wait, what? I’ve never heard this story.”

“Then listen up,” Grandpa said, sitting up straighter. “This happened hundreds of years ago, between two kingdoms. They were on the brink of war—over something silly, like land or treasure. The kings couldn’t agree, and their armies were ready to fight.

“But one of the kings had a strange idea. He invited the other king to a meeting. Not to talk, but to play a game of chess.”

Marco frowned. “Why chess? Wouldn’t they just fight during the game anyway?”

“Exactly the opposite,” Grandpa said. “On the chessboard, there are rules. You can’t cheat, you can’t lie, and you can’t use brute strength. It’s a battle of minds, not weapons. The kings sat down, and instead of throwing soldiers at each other, they threw their strategies onto the board. For hours, they played. And you know what happened?”

“What?” Marco asked, his eyes wide.

“They started to respect each other,” Grandpa said. “They saw how the other thought, how they planned, how they valued their pieces. By the time the game was over, they weren’t enemies anymore. They were equals. Instead of going to war, they signed a treaty. All because of chess.”

- **The Tabletop Battlefield**

“Wow,” Marco said, sitting back in his chair. “So chess stopped a war? That’s pretty cool.”

“It’s more than cool,” his mom said, moving her queen to take one of his dad’s pawns. “It’s important. Think about it, Marco. In chess, you can argue, fight, and even get frustrated—but no one gets hurt. And when the game’s over, you can start fresh.”

His dad nodded, countering her move with a knight. “And the board doesn’t care who you are. It doesn’t care if you’re a king or a pawn, rich or poor, young or old. The rules are the same for everyone. That’s why chess works as a tool for peace—it puts everyone on equal ground.”

Grandpa leaned forward. “It’s like Mathpoetry said: when you’re angry, resolve it on the board. When you’re lonely, meet someone on the board. When you’re happy, celebrate on the board. Chess doesn’t just teach you strategy—it teaches you connection. Empathy. Humility.”

Marco thought about that. “But what about people who don’t play fair? What if someone cheats or doesn’t care about the rules?”

Grandpa smiled. “That’s where humility comes in, Marco. The chessboard can surprise people who are arrogant. If someone underestimates you, their own pride will trip them up. But more importantly, if you’re humble—if you play with sincerity—you can show them another way. A better way.”

His mom chimed in. “And if they cheat or refuse to play fairly, you’ve already won. Because chess teaches you something they’ve forgotten: winning isn’t everything. It’s how you play the game that matters.”

- **Chess as a Universal Language**

“Do you know what I love about chess?” Grandpa said, after a moment of silence.

“What?” Marco asked.

“It’s universal,” Grandpa replied. “You don’t need to speak the same language as your opponent. You don’t need to agree on anything except the rules of the game. You can sit across from someone who’s completely different from you—different culture, different beliefs, different everything—and still connect. The chessboard becomes your common ground.”

His dad added, “There’s a reason they use chess in international events, Marco. During the Cold War, for example, when tensions were high between countries, they didn’t just fight with weapons—they also played chess. It was a way to compete without destruction. A way to prove your strength through intellect instead of violence.”

His mom smiled. “And that’s why chess is so special. It’s not just a game. It’s a bridge. It shows us that even when we disagree, we can still sit down together, follow the same rules, and find peace.”



- **The Chessboard of Friendship**

That evening, Marco couldn't stop thinking about the idea of chess as a tool for peace. As he stared at the chessboard in his room, he imagined people from all over the world—different ages, different backgrounds—sitting together to play.

In his mind, he saw kids like him resolving arguments with pawns and rooks instead of shouting. He imagined leaders playing matches instead of sending armies. He imagined a world where the chessboard wasn't just a battlefield—it was a meeting place.

“Maybe Grandpa's right,” Marco murmured to himself. “Maybe chess really can change the world.”

He picked up a pawn and turned it over in his hand. It was the smallest piece on the board, but now, it felt like the most important.

- **The Final Move**

The next day, Marco brought the chessboard to school. During lunch, he set it up on the cafeteria table.

“What's that for?” one of his friends asked.

“Just felt like playing,” Marco said. “Anyone want to join?”

One by one, his friends gathered around. At first, they laughed and joked, but soon they were deep in the game, concentrating on their moves. By the end of lunch, two kids who had been arguing earlier were shaking hands over the board.

“Good game,” one of them said.

“You too,” the other replied, smiling.

Marco grinned. Grandpa was right. The chessboard wasn't just a game—it was a way to bring people together.

As he packed up the pieces, he made a promise to himself: no matter where life took him, he'd always carry the lessons of the board with him.

Because in a world full of conflicts, the best move wasn't always checkmate. Sometimes, it was simply sitting down and playing the game.

- **Chapter Thirteen: Reflecting Love through Chess**

On Sunday, the family went to the theatre to see the play ‘The Flower is a Mirror, Reflecting Love’. Marco, who was never very enthusiastic about the theatre, entered the room a little reluctant, but by the end of the performance, he was impressed.

The play was unlike anything he had ever seen. It wasn't just a story - it was an invitation to action, to transformation.

The characters talked about love, about how the world was a reflection of ourselves, and about how small changes in our actions could create big impacts. The dances and poetic texts had moved them all deeply.

The family returned home from the theater that night, their hearts full of something indescribable yet undeniable—a quiet, glowing sense of hope. The play, "A Flor é Espelho, Refletindo o Amor," had struck a deep chord in each of them, leaving them both inspired and introspective.

Even Marco, who normally fidgeted through long plays, had been mesmerized by the dancers, the poetry, and the heartfelt performances. He hadn't just watched the story; he had felt it.

As they gathered around the dining room table, Grandpa sat at the head of it, holding the chessboard in his lap. His eyes sparkled with an energy that made him seem younger than he was.

"Well," Grandpa began, setting the board on the table, "what did everyone think?"

Marco's mom, still holding the program from the play, sighed with a smile. "It was beautiful. That part where they talked about the reflection of love... I don't think I'll ever forget it."

His dad nodded. "Especially the ending, with the mother and daughter. That 'Eu te amo' repeated over and over... it wasn't just a line. It was real."

"It was more than real," Marco said, surprising even himself. "It was like... I don't know. It felt like they were talking to everyone, not just the people in the theater. Like we're all part of the same story."

Grandpa smiled, his expression proud. "Exactly, Marco. That's what art does. It reminds us that we're connected—every one of us. And you know what else can do that?"

Marco tilted his head. "Let me guess. Chess?"

Grandpa chuckled. "That's right, kiddo. Chess."

- **Planting the Seed of a Movement**

"Wait," Marco's mom said, sitting up straighter. "What do you mean, Dad? How does chess connect people like that?"

"Think about it," Grandpa said, placing a pawn on the board. "What did the play teach us? That love isn't just a feeling—it's an action. It's something you reflect, like light in a mirror. Chess is the same. Every move you make reflects who you are. Your patience, your creativity, your humility—it all shows up on the board."

Marco leaned forward. "Okay, but how is that love?"

Grandpa pointed at the board. "When you sit down to play with someone, Marco, you're not just competing. You're sharing something. You're saying, 'I see you. I respect you. Let's do this together.' And when the game's over, no matter who wins, you've connected. Even if it's just for a moment."

“That’s true,” Marco’s dad said thoughtfully. “When I play chess, I feel like I get to know the other person, even if we don’t talk much. It’s like the board becomes a bridge between us.”

“And that bridge can be built anywhere,” Grandpa said. “In schools, in parks, in prisons, in hospitals. Chess doesn’t care who you are or where you come from. It doesn’t care if you’re rich or poor, young or old. The rules are the same for everyone. It’s an equalizer.”

Marco’s mom smiled. “That’s beautiful, Dad. But what are you suggesting?”

Grandpa’s eyes twinkled. “I’m suggesting we do something about it. We’ve been inspired by this play—so let’s take that inspiration and turn it into action.”

Marco’s dad raised an eyebrow. “Action? What kind of action?”

Grandpa grinned. “Let’s bring chess to the people who need it most. To the lonely, the forgotten, the ones who think the world doesn’t see them. Let’s show them they’re not invisible. Let’s reflect the love we saw tonight—through the chessboard.”

- **The First Step**

The next weekend, the family packed up an old folding table, a few chessboards, and a box of sandwiches. Grandpa had convinced them to join him on a new mission: to bring chess to the streets.

Their first stop was a small park downtown where a few homeless people sat on benches, huddled against the chill of the morning air. At first, Marco felt awkward. He wasn’t sure how to approach them.

“Just smile,” Grandpa whispered. “And say hello. The chessboard will do the rest.”

Marco hesitated, then approached a man sitting alone with a tattered blanket draped over his shoulders. “Hi,” Marco said, holding up the board. “Want to play?”

The man looked at him, surprised. “Me? You sure?”

“Yeah,” Marco said, smiling. “Come on. I could use a challenge.”

The man chuckled softly, then nodded. As they played, Marco noticed how the man’s posture straightened, how his eyes lit up when he captured Marco’s queen. By the end of the game, they were both laughing.

“Good game,” the man said, shaking Marco’s hand. “Thanks for that. It’s been a while since I’ve played... or talked to anyone, really.”

“No problem,” Marco said, feeling a warmth in his chest.

Across the park, Grandpa was teaching two young boys how to play, while Marco’s mom and dad sat with an older woman, sharing sandwiches and chatting as they played a game of their own.

The chessboards became more than just a way to pass the time—they became a way to connect, to reflect the love they had seen in the play.

- **A Growing Movement**

Word spread quickly about the family's chess outreach. Soon, other people wanted to join in. Marco's school donated extra chess sets, and a local café offered their space for free chess nights.

The family took their mission further, visiting schools, hospitals, and retirement homes. Marco loved playing with the kids at the children's hospital, who laughed every time he made a dramatic show of "losing" to them.

"It's not about winning," he told one little girl, moving his king into checkmate. "It's about having fun."

At a nearby retirement home, Grandpa played with an elderly man who hadn't spoken much since his wife passed away. By the end of their game, the man was telling Grandpa stories about his youth, his eyes sparkling with life.

And when they visited the mayor's office to ask for funding, something extraordinary happened.

- **Chess for the City**

The mayor, intrigued by their work, invited them to host a citywide chess tournament. Businesses sponsored the event, providing prizes and donating chessboards for community centers.

On the day of the tournament, the city square was filled with people of all ages and backgrounds, sitting across from each other at rows of tables.

Marco looked around, amazed. There were kids from his school playing against senior citizens, doctors playing against patients, and even a local business tycoon squaring off against a teenager.

Grandpa stood at the center of it all, beaming. "Look at this," he said to Marco. "This is what love looks like, reflected back at us. One board at a time."

- **A Chessboard of Hope**

By the end of the day, the family's movement had gained even more momentum. The mayor declared the event an annual tradition, and local news stations covered the story, calling it "The Chessboard of Love."

As they packed up their table and boards, Marco turned to his family. "Do you think this will really make a difference?"

Grandpa placed a hand on his shoulder. "It already has, Marco. And it will keep growing. Because when you reflect love into the world, it multiplies."

Marco smiled, holding a pawn in his hand. For the first time, he truly understood what Grandpa had been trying to teach him all along.

- **Epilogue: The World as a Chessboard**

Years later, Marco would look back on that moment as the start of something extraordinary. What began with a single chessboard in a park grew into a global movement, uniting people across countries and cultures.



And every time he sat down at a chessboard—whether with a friend, a stranger, or an “enemy”—he remembered the lesson that changed his life:

**The world is a mirror. Reflect love, and love will be reflected back to you.**

**Attention,** Mathpoetry, the chess philosopher says: ‘There are no epilogues, after one game we can always start another, the Game must go on...’



## SYNTHESIS AND EXPLOITATION OF BIO-POTENTIAL OF FURAN AND THIOPHENE CONTAINING DERIVATIVES VIA CROSS-COUPLING REACTIONS

Shehla Khalid, Noor Fatima, Nasir Rasool\*, Muhammad Zubair\*

[shehlakhalid47@gmail.com](mailto:shehlakhalid47@gmail.com)

[noorfatima09263@gmail.com](mailto:noorfatima09263@gmail.com)

[shamoonhassan2@gmail.com](mailto:shamoonhassan2@gmail.com)

\*[nasirrasool@gcuf.edu.pk](mailto:nasirrasool@gcuf.edu.pk)

\*[zubairmkn@gcuf.edu.pk](mailto:zubairmkn@gcuf.edu.pk)

Department of Chemistry.

Government College University Faisalabad, 38000 Pakistan.

### Abstract

Furan derivatives have a significant role in the pharmaceutical industry as well as have anti-cancer, anti-fungal, anti-bacterial, anti-inflammatory, anti-viral, and anti-tubular activities. While thiophene moiety has bio-potential as anti-inflammatory, antipsychotic, antiarrhythmic, antianxiety, antifungal, antioxidant, antimutagenic, antimicrobial, kinases inhibiting, and anti-cancer.

Our studies show the anti-bacterial potential of N-(4-Bromophenyl) furan-2-carboxamides and anti-tumor, hemolytic, anti-thrombolytic, and biofilm inhibition potential of 2,5-dibromo-3-hexylthiophene. In the past, C-C bond formation being multi-steps showed low yield and low functional group tolerance. Among various synthetic methods reported for the synthesis of Furan derivatives, the Suzuki cross-coupling reaction is an easy way to build a carbon-carbon bond in synthesizing organic compounds. This reaction also shows high tolerance towards a wide range of functional groups under mild reaction conditions.

**Key Words:** Thiophene, Furan, Heterocycles, Cross-Coupling, Catalytic, Bioactive





## EXPLORING ENVIRONMENTAL BENEFITS OF HOMOGENOUS CATALYSIS IN DSSCS

**Associate Professor Dr. Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University,**

**Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com**

### ABSTRACT

Together with the electrolyte, solvent, and counter electrode, the semiconductor titanium oxide and dye sensitizer—which can come from synthetic or natural sources—are used to create aqueous dye-sensitized solar cells (DSSCs). They are not affected by environmental contaminants and can be treated at room temperature. A low-cost production method that makes effective use of scattered light in poorly lit areas is the roll-to-roll process. DSSCs are a viable substitute for conventional solar cells due to their affordability and environmental friendliness. To speed up the novel sensitizer (ferricypr) and electrolyte (iodide) reaction, the study recommends utilizing a non-toxic solvent as a homogeneous catalyst, such as a 5/95 volume fraction of tertiary butyl alcohol/water. Spectrophotometric techniques and pseudo-first order conditions were used to analyze the process. An effective catalytic kinetic procedure was suggested by evaluating the impacts of several parameters, such as pH, ionic strength, iodine concentration, and temperature.





## REUSABLE BIOCOMPOSITE FOR EFFICIENT REMOVAL OF ANILINE GREEN DYE

**Associate Professor Dr. Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University,**

**Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com**

### ABSTRACT

As public awareness of the environment and sustainability has grown, biobased composite materials have emerged as a more sustainable alternative to nonrenewable synthetic fibers. However, these materials have disadvantages, such as poor moisture resistance, supply logistics concerns, low thermal stability, flammability, poor electrical characteristics, extraction, processing, surface modification, machining, manufacturing, and characterization challenges. This study aims to increase the long-term durability, sustainable production, and reusability of the biocomposite by adding walnut shell powder into conducting polymer. A biocomposite made of polymer and bio-waste, such as polyindole@Walnut Shell (PI@WS), was created and used as an effective adsorbent for the removal of refractory organic contaminants i.e., aniline green (AG) from aqueous solution. The influence of pH, adsorbate starting concentration, adsorbent (PI@WS) dose, and temperature were investigated to determine the optimal AG adsorption condition. Under optimized experimental settings, the AG dye was adsorbed in a matter of minutes, and the biocomposites performed well for up to five cycles of reuse.

## NON-TOXIC SOLVENTS: A PATH TO MORE EFFICIENT DSSC SYSTEMS

**Associate Professor Dr. Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University,**

**Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com**

### **Abstract**

Fast recombination kinetics, a strong interaction with iodine in the electrolyte, the absence of an electron-donating moiety in oxidized organic dye, and dye aggregation because of planar or sterically less-hindered structure are some possible causes of the low voltages from organic dyes. The design of an organic dye's molecular structure is necessary to minimize recombination and stop dye aggregation. The majority of research is on improving the photoelectrode's characteristics, particularly the dye, which is mostly in charge of light absorption. Sensitizers or dyes play a crucial role in solar cells, capturing light and controlling photoelectric conversion efficiency. The ideal sensitizer should efficiently inject photoexcited electrons into the semiconductor's conduction band, bind to the oxide surface, and absorb a wide range of solar light. It should also have a high redox potential for rapid regeneration and be long-lasting and thermally stable. This study explores the use of water-soluble polar aprotic dimethyl sulfoxide to accelerate the dye-electrolyte reaction rate in dye-sensitized solar cells (DSSCs). The aim is to enhance the longevity, effectiveness, and design of DSSC components through the sensitizer-mediator redox process. The study used a Fe(III)-based oxidised dye, dicyanobis(2,2'-bipyridyl)iron(III), to oxidize iodide using a co-solvent mixture of 10% dimethyl sulfoxide and 90% water.

## PREPARATION, CHARACTERIZATION AND APPLICATION OF TERNARY PHOTOCATALYST FOR DEGRADATION OF TOXIC DYES AND WASTEWATER TREATMENT

**Assoc. Prof. Dr Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University, Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com**

### B. Abstract

The synthesis and use of an affordable photocatalyst to degrade the dangerous malachite green has been examined in this work. Despite being a widely used and reasonably priced dye in industry, malachite green poses significant risks due to its high toxicity, carcinogenicity, and persistence in aquatic environments. The degradation experiments were carried out in a variety of conditions; including room light (visible white light), complete darkness, and direct sunlight. The percentage of MG that was degraded showed that the photocatalyst (composite) was most effective in the dye degradation process for all of the composite's selected dosages, ranging from 0.0005 g to 0.05 g. Additionally, the catalyst effectively degrades the high concentration of MG. In sunlight, the composite's photocatalytic effectiveness was higher in all conditions—acidic, neutral, and alkaline. The study concludes that the selected oxide combination offers a cost-effective and efficient method of treating dye-contaminated wastewater.

## INVESTIGATING ALTERNATIVES TO IODIDE IN SOLAR CELL CHEMISTRY

**Associate Professor Dr. Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University,**

**Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com; rznkhattak@sbbwu.edu.pk**

### **Abstract**

The recombination mechanism and two electron exchange chemistry of iodide are the reasons why there is a focus on substituting iodide in solar cells to improve stability and efficiency. Two ferrocene derivatives were used as mediators in this study instead of iodide because of their superior one electron exchange chemistry. Acetylferrocene and ferrocenylethanol, were investigated and their electron-exchange mechanisms compared in a mixed solvent system containing 20% dioxane in water. The overall order of reactions for each reactant was determined by examining reactions at constant ionic strength. Ferricyphen served as a sensitizer. Every reaction has a parallel reaction pathway with complex kinetics. Temperature, dielectric constant, ionic strength, pH, and reactant concentration were all considered when developing the rate laws for each reaction.

## CARCINOGENIC POTENTIAL OF PORPHYROMONAS AND FUSOBACTERIUM AND THEIR ROLE IN PROMOTING ORAL SQUAMOUS CELL CARCINOMA WITHIN PAKISTANI POPULATION: A REVIEW

Asad Ullah<sup>1\*</sup>

<sup>1</sup>Department of Pathology, University of Veterinary and Animal Sciences, Lahore, Pakistan

\*Corresponding Author: Asad Ullah (MPhil Scholar) Department of Pathology, University of Veterinary and Animal Sciences, Lahore, Pakistan

### Abstract

Oral squamous cell carcinoma (OSCC) is a most frequent type of Head and Neck squamous cell carcinomas (HNSCC) accounting for an overall incidence of approximately 8.6% new cases in Pakistan per annum. It is the second most common cancer in Pakistan secondary to breast cancer, the most common type of cancer in Pakistan. Despite of relentless research in HNSCC, there are only a few advancements in understanding the role of oral microbiota and how they favor OSCC

development and metastasis. One of the potential oral microbiota carcinogenic agents can be Porphyromonas and Fusobacterium in favoring the development and promoting the aggressive behavior of OSCC as most of the tissues impacted by OSCC Pakistani cancer patients harbor these agents. Fusobacterium nucleatum infection has been shown to promote epithelial-mesenchymal transition (EMT) via the lncRNA MIR4435-2HG/miR-296-5p/Akt2/SNAI1 signaling pathway, suggesting a potential link between EMT and oral epithelial carcinogenesis. Porphyromonas gingivalis and related species upregulate zinc-dependent matrix metalloproteinases which degrade the extracellular matrix to help malignant epithelial cells metastasize. Furthermore, the metabolic byproducts of P. gingivalis such as butyrate and aldehyde can favor B and T lymphocyte apoptosis thereby, promoting immunodeficiency and increased chances of tumor survival. These toxic metabolites can also lead to genomic instability and cell cycle arrest, which can lead to accumulations of DNA mutations that in turn further aggravate OSCC or act as a risk factor. This study provides a critical insight into the carcinogenic pathways that these bacteria can utilize to facilitate OSCC development or metastasis

**Key words:** Cancer, Head and Neck Squamous Cell Carcinomas, Oral Squamous Cell Carcinoma, Pakistan, Oral Microbiota, Porphyromonas and Fusobacterium



## PRACTICAL APPLICATIONS OF SUGARCANE BAGASSE IN WASTEWATER TREATMENT

**Assoc. Prof. Dr Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University, Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com**

### C. Abstract

Sugarcane bagasse is a low-cost, environmentally friendly biosorbent for removing organic contaminants. The adsorption of Remazol Brilliant Violet-5R (RBV-5R) dye onto SCB was investigated using EDX and FTIR. The biosorbent's effectiveness was optimized by adjusting parameters such as pH, biosorbent dosage, initial dye concentration, contact time, and temperature. The highest biosorption rate was found at pH 6, with an initial dye concentration of 10  $\mu\text{g/mL}$  being most effective. The study also found that the biosorption of RBV-5R follows Freundlich adsorption isotherms. The study was conducted on textile waste effluent, indicating potential for practical application.





## GENERATIVE AI IN RENEWABLE ENERGY: TRANSFORMING DESIGN AND OPTIMIZATION

Muhammad Mateen Afzal Awan

Electrical Engineering Department, University of Management and Technology Lahore-Sialkot

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### Abstract:

Generative Artificial Intelligence (AI) has emerged as a game-changer in renewable energy, particularly in photovoltaics (PV). By leveraging advanced algorithms such as generative adversarial networks (GANs) and variational autoencoders (VAEs), generative AI facilitates the design of high-efficiency materials and predictive analytics for energy systems. This paper explores how generative AI enables the rapid discovery of novel photovoltaic materials by simulating molecular structures with optimized energy band gaps and stability. Furthermore, its applications in forecasting solar energy production under varying weather conditions offer substantial improvements in grid reliability and energy storage management. Generative AI also supports automated fault detection and diagnostics by analyzing performance data and identifying anomalies. Challenges discussed include the high computational cost, data privacy concerns, and the interpretability of AI models. This work outlines the ethical and environmental considerations of integrating generative AI into renewable energy systems, ultimately providing a framework for sustainable, data-driven energy solutions.

### Keywords:

Generative AI, Renewable Energy, Photovoltaic Systems, Material Discovery, Predictive Analytics, Fault Detection, Energy Storage Management.





## THE ROLE OF NANOMEDICINE IN TARGETED DRUG DELIVERY FOR CANCER TREATMENT

Jeevan .M

### Abstract:

Nanomedicine has emerged as a revolutionary approach in the field of pharmacology, particularly in the targeted delivery of drugs for cancer treatment. Conventional chemotherapy often results in systemic side effects due to the lack of specificity in drug distribution, leading to damage to healthy tissues. Nanoparticles, due to their small size and customizable surface properties, can be engineered to deliver anticancer agents directly to tumor cells while minimizing damage to surrounding healthy tissues. This review explores the mechanisms by which nanoparticles facilitate targeted drug delivery, including passive targeting via the enhanced permeability and retention (EPR) effect, and active targeting through surface modification with ligands that recognize tumor-specific markers. We also examine the different types of nanoparticles being investigated, such as liposomes, dendrimers, and polymeric micelles, and their potential advantages in overcoming challenges like drug resistance and poor bioavailability. Additionally, the toxicological aspects and regulatory considerations for the clinical translation of nanomedicine are discussed. As research in this field progresses, nanomedicine holds the promise of transforming cancer treatment by improving the efficacy and safety profiles of chemotherapeutic drugs, potentially leading to better patient outcomes and reduced treatment-related side effects..

### Keywords:

**Nanomedicine, Targeted drug delivery, Cancer treatment, Chemotherapy, Cancer therapeutics .**

## LAMPUNG İLİ PESAWARAN İLÇESİNDE MANGROVUN GIDA OLARAK KULLANIMINA İLİŞKİN ETNOBOTANİK ÇALIŞMA

Melviani<sup>1</sup>, Duryat<sup>2</sup> dan Melya Riniarti<sup>3</sup>

ORCID:

[melviani321@gmail.com](mailto:melviani321@gmail.com)

<sup>123</sup>Ormanlık Bölümü, Ziraat Fakültesi, Lampung Üniversitesi, Jl. Prof. Dr. Sumantri Brojonegoro No. 1  
Bandar Lampung, 35145, Endonezya

### Özet

Gıda krizi şu anda Endonezya da dahil olmak üzere çeşitli ülkelerin daha fazla ilgi göstermesini gerektiren küresel bir sorundur. Küresel gıda krizinin üstesinden gelmek için, mangrov bitkileri alternatif bir fonksiyonel gıda kaynağı olarak geliştirilme potansiyeline sahiptir. Bu çalışmanın amacı, Pesawaran Regency'de bir gıda kaynağı olarak mangrov kullanımı uygulamasını etnobotanik olarak belgelemektir. Araştırma Mart-Haziran 2024 tarihleri arasında Sidodadi Köyü ve Gebang Köyü, Teluk Pandan Bölgesi, Pesawaran Regency'de gerçekleştirilmiştir. Bu faaliyet, Pesawaran Regency'de mangrov bitkilerinin etnobotanik besin kaynağı olarak kullanımı ile ilgili tüm bilgileri elde etmek ve toplamak için Kartopu Örnekleme yöntemi ile gerçekleştirilmiştir. Toplanan veriler, problemin formülasyonuna uygun olarak gerekli verileri keşfetmek için görüşme teknikleri, gözlem ve dokümantasyon kullanılarak elde edilen bitki türleri, kullanılan kısımları, işleme yöntemleri, üretilen ürünler ve özellikleridir. Veri analizinde, etnobotanik fonksiyonel bir gıda kaynağı olarak mangrov işleme türlerini, süreçlerini ve ürünlerini tanımlamak için tanımlayıcı analitik yöntemler kullanılmıştır. Pesawaran Regency'deki kıyı toplulukları, Legundi (*Vitex trifolia*) ve Mangrov (*Rhizophora mucronata*) gibi mangrov bitkilerinin meyvelerini kullanarak çeşitli gıda ürünlerine dönüştürmektedir. Üretilen işlenmiş ürünler: mutfak baharatları, un, şurup ve şeker olarak sadece gıda kaynağı olarak değil, aynı zamanda ilaç veya hastalık önleyici özelliklere de sahiptir.

**Anahtar Kelimeler:** Mavi ekosistem, kriz, gıda, iklim, kıyı, çeşitlendirme.

## OPTIMIZED GENETIC ALGORITHM FOR MAXIMUM POWER POINT TRACKING IN PHOTOVOLTAIC SYSTEMS

Muhammad Mateen Afzal Awan

Electrical Engineering Department, University of Management and Technology Lahore-Sialkot

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### Abstract:

Efficient maximum power point tracking (MPPT) is critical for optimizing the performance of photovoltaic (PV) systems under varying environmental conditions. This paper presents an advanced approach to MPPT using an optimized genetic algorithm (GA). The proposed method integrates adaptive mutation and crossover strategies to improve convergence speed and accuracy in locating the maximum power point (MPP). Unlike traditional methods such as Perturb and Observe (P&O) or Incremental Conductance, the genetic algorithm dynamically adapts to rapid fluctuations in irradiance and temperature, ensuring minimal power loss and enhanced system efficiency. Comparative analysis demonstrates the superiority of the optimized GA in terms of tracking speed, stability, and resilience to local maxima in complex power-voltage curves. The study also explores the computational efficiency of the algorithm and its compatibility with real-time embedded systems. Experimental validations on various PV configurations under simulated and real-world conditions confirm the algorithm's robustness and effectiveness. Future prospects include the integration of machine learning techniques to further refine the MPPT process.

### Keywords:

Genetic Algorithm, Maximum Power Point Tracking, Photovoltaic Systems, Renewable Energy, Adaptive Optimization, Real-Time Control, Power Efficiency.

## ETHNOBOTANICAL STUDY OF MANGROVE UTILIZATION AS FOOD IN PESAWARAN DISTRICT, LAMPUNG PROVINCE

Melviani<sup>1</sup>, Duryat<sup>2</sup> dan Melya Riniarti<sup>3</sup>

Email:

[melviani321@gmail.com](mailto:melviani321@gmail.com)

<sup>123</sup>Degree of Forestry, Faculty of Agriculture, University of Lampung, Jl. Prof. Dr. Sumantri Brojonegoro No. 1 Bandar Lampung, 35145, Indonesia

### Abstract

The food crisis is currently a global issue that requires more attention from various countries, including Indonesia. To overcome the global food crisis, mangrove plants have the potential to be developed as an alternative functional food source. The purpose of this study was to ethnobotanically document the practice of utilizing mangroves as a food source in Pesawaran Regency. The research was conducted in March-June 2024 in Sidodadi Village and Gebang Village, Teluk Pandan District, Pesawaran Regency. This activity was carried out through the Snowball Sampling method to obtain and collect all information related to the utilization of mangrove plants as ethnobotanical food sources in Pesawaran Regency. The data collected were the types, parts of plants utilized, processing methods, products produced and efficacy obtained using interview techniques, observation, and documentation to explore the necessary data in accordance with the formulation of the problem. Data analysis used descriptive analytical methods to describe the types, processes, and products of mangrove processing as an ethnobotanical functional food source. Coastal communities in Pesawaran Regency, using the fruit of mangrove plants such as Legundi (*Vitex trifolia*) and Mangrove (*Rhizophora mucronata*) are processed into a variety of food products. The processed products produced are: as kitchen spices, flour, syrup and sugar which not only function as a food, but also as a source of food.

**Keywords:** Blue ecosystem, crisis, food, climate, coastal, diversification

## ALTERNATİF KABA YEM KAYNAKLARININ HAYVAN BESLEMEDE KULLANIMI

Nizamettin TURAN  
Siirt Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü  
(Orcid No: 0000-0002-4026-6781  
Sorumlu yazar: nturan49@siirt.edu.tr

### Özet

Dünyada sürekli artan nüfus ve buna bağlı olarak artan gıda ihtiyacı nedeniyle insanoğlu her zaman alternatif kaynakları aramak ve bulmak zorundadır. Türkiye’de çayır ve mera alanlarının kontrolsüz otlatılması ve yeterli düzeyde yem bitkileri üretiminin olmaması nedeniyle kaliteli kaba yem açığı bulunmaktadır. Kaba yem açığının çayır ve mera alanları ve yem bitkileri üretimi ile kapatılmasının mümkün olmadığından, hayvancılığın gelişmesi ve üretim maliyetlerinin düşmemesi için alternatif yem kaynaklarına ihtiyaç duyulmaktadır. Yararlanılabilecek tüm alternatif kaba yem kaynaklarının içeriği ve ekonomik değerinin incelenerek hayvancılık işletmelerine kazandırılması gereklidir. Ancak hayvan beslemede kullanılabilen kaliteli alternatif kaba yem kaynakları Ülkemizde yeterince değerlendirilmemektedir.

**Anahtar Kelimeler:** Kaba yem, alternatif, kalite, hayvan besleme.

## USE OF ALTERNATIVE ROUGHAGE SOURCES IN ANIMAL NUTRITION

### Abstract

Due to the ever-increasing population in the world and the correspondingly increasing need for food, it is always possible for human beings to seek and find alternative sources. There is a deficit of quality forage in Turkey due to uncontrolled grazing of meadow and pasture capacity and the lack of sufficient forage crop production. Alternative feed sources are needed in order to overcome the forage deficit through the production of meadow and pasture areas and forage plants, to improve animal husbandry and to prevent production costs from falling. It is important to examine all alternative forage ingredients that can be used and those that can be accommodated economically and to bring them to livestock farming properties. However, quality alternative roughage sources are adequately used in animal nutrition.

**Key Words:** Roughage, alternative, quality, animal nutrition.

## Giriş

Ülke hayvancılığımızın geliştirilmesinde çözülmesi gereken en önemli sorunlardan biri kaliteli, ucuz ve bol kaba yem ihtiyacının düzenli karşılanmasıdır (Ayan ve ark., 2006; Kara ve Yüksel, 2014). Kaba yemler hayvancılıkta vazgeçilmez yem kaynaklarıdır ve ülkemiz hayvancılığında çok ciddi kaliteli kaba yem açığı olduğu bir gerçektir (Alçıçek ve ark., 2003; Ayan ve ark., 2006; Kara ve Yüksel, 2014). Kaba yem üretiminin yetersizliği, selülozca zengin ve yem değeri düşük olan sap, saman, kavuz ve kapçık gibi yemlerin ruminantların beslenmesinde kullanımını zorunlu hale getirmekte ve bu yem kaynakları ile hayvanlarımızın ancak yasama payı ihtiyaçları karşılanabilmektedir (Alçıçek ve ark., 1997; 2000). Türkiye’de yem bitkileri üretimindeki yetersizlikler ve tarım alanlarının amacı dışında kullanılması, düzensiz otlatma, tarımda makineleşme gibi değişik sebepler nedeniyle çayır meraların verimsiz olması alternatif yem kaynaklarının kullanımına yönelmeye yol açmıştır (Gemalmaz ve Bilal, 2016). Türkiye’de üretilen yem bitkileri mevcut hayvan varlığının ihtiyaç duyduğu kaliteli kaba yemi karşılamakta yetersiz kaldığı ve bu nedenle alternatif kaba yem kaynaklarının rasyonlara dâhil edilmesi gerektiği bildirilmektedir (Gülümser ve ark., 2022). Kaba yemlerin hayvan besleme fizyolojisine uygunluğunun yanı sıra, kaliteli ve ucuz olması, daha pahalı olan ve insan beslenmesinde de kullanılan yoğun ya da kesif yemlerin hayvan beslemede kullanımını azaltmaktadır (Alçıçek ve ark., 2003; Ergül, 1997; Lemus, 2009). Hayvan yetiştiriciliğinde üretim maliyetlerinin yaklaşık %70-80 besleme ve yem masrafları olması nedeniyle, ruminant hayvan yetiştiriciliğinde kaliteli ve ucuz yemler kullanmak işletme karlılığını artırmasından dolayı yem üreticilerini ve hayvan yetiştiricilerini alternatif olabilecek yem kaynakları bulmaya yoğunlaştırmıştır (Vasta ve ark., 2008).

### Alternatif Kaba Yem Kaynaklarından Bazıları

**1-Yem şalgamı:** Hem yaprakları, hem de içinde çok az şeker bulunan yem şalgamının yumruları, süt ve besi sığırları tarafından sevilerek tüketilmektedir (Ayan ve ark., 2006). Tek veya iki yıllık bir yem bitkisi olan yem şalgamının kök ve ot olmak üzere iki tipi bulunmaktadır. Kök tipi yem şalgamı günlük hasat edilerek hayvanlara verilmelidir. Soldurulduktan sonra diğer yem bitkileri ile karıştırılarak silolanabilir. Silolama için en uygun zaman ise tam çiçeklenme zamanıdır (Ergün ve ark., 2011; Garipoğlu, 2013; Türk ve ark., 2009). Süt sığırlarına verilebilecek miktar hayvan başına 5-7.5 kg arasında olmalıdır. Yem şalgamı yumrularında ham protein oranının %10-15, yapraklarında %15-20 arasında değiştiği öne sürülmektedir (Jung ve ark., 1986). Süt sığırlarının beslenmesinde kullanılan ve endüstriyel bir atık olan posanın içerisinde kabuk, etli kısım ve çekirdek bulunmaktadır. Posa taze ve kuru olarak tüketilebileceği gibi silajı yapılarak da saklanabilmektedir. Yüksek su içeriğinden dolayı elma posasının saman ile silolanması, silajın korunması için pratik bir yöntemdir (Pirmohammadi ve ark., 2006; Garipoğlu, 2013; Hadjipanayiotou, 1994; Gemalmaz ve Bilal, 2016)

**2- Hayvan pancarı:** Meraların kuruduğu veya üretimin yetersiz olduğu dönemlerde bol ve kaliteli yeşil ot ile kök ürünü verebilen, özellikle sulu koşullarda çok verimli bir bitkidir (Parlak ve Ekiz, 2008). Süt inekleri ve besi sığırları için uygun bir yem olan hayvan pancarının hayvan başına verilecek miktarı (yaş olarak) 30 kg'ı geçmemelidir. Daha fazlası süt yağında azalmaya ve tereyağının sert kıvamda olmasına neden olmaktadır. Besiye alınan koyunlara hayvan başına 3-4 kg, diğerlerine ise bunun yarısı kadar verilmesi tavsiye edilmektedir (Ergün ve ark., 2011; Garipoğlu, 2013). Hayvan pancarı mineral maddelerden Ca, Mg, Na, Cl, Fe ve Mn bakımından çok zengin olduğunu, kış besisinde kullanılmaya uygun, şeker oranı yüksek, lezzetli ve sulu bir yem olduğunu, kuru madde oranı %10, ham protein %1, ham selüloz %0.8, ham yağ %0.1, ham kül %1.0, NEF %7.1 olduğunu bildirmektedir (Akyıldız, 1986). Başka araştırmacılar (Belal, 2003) ise hayvan pancarının kuru maddesindeki ham protein oranının %7.41, ham lif %12.73, NEF %69.0 olduğunu ifade etmektedir. Hayvan pancarı protein, mineral ve vitamin içeriği bakımından fakir olduğundan, baklagil kuru otları, kepek ve küspelerle desteklenmelidir.

**3- Şeker pancarı:** Köklerinden şeker elde edilen pancarın baş ve yaprakları ile şeker fabrikasyonunda yan ürün olarak elde edilen posa, melas ve melastan alkol, maya ispiroto v.b. ürünler üretilmesi sırasında yan ürün olarak elde edilen şilempe de değerli birer yem hammaddesi olarak hayvan beslemede değerlendirilmektedir (Anonim, 1993; Ak, 1997). Şeker pancarı yapraklarının su oranı yüksek, kuru madde miktarı düşük bir yemdir (Ak ve Uzaticı, 2001). Kurutulmuş şeker pancarı yaprakları %8-10 sindirilebilir ham protein ve %24 şeker içermektedir (Arpacık, 1999; Yüksel ve ark., 1998). Taze yapraklar %3'e kadar, kurutulmuş yapraklar ise %23'e kadar sakkaroz içermektedir (Karabulut, 1995)

**4-Patates posası:** Patates posası, patatesten nişastanın çeşitli metotlarla çıkarılmasını takiben geriye kalan atık kısmıdır (Nicholson ve ark., 1963). Hayvan beslemede kullanılması ile özellikle ruminant hayvanlar için alternatif yem kaynağı sağlamasının yanında, çevre kirliliğinin de önüne geçilmektedir. Çünkü patates posasının atık olarak işletmeden atılması, hem çevre kirliliğine neden olmakta hem de ek bir maliyet doğurmaktadır (Wang, ve ark., 2010). Patates posasının kuru madde içeriği %9.5-23.5, protein içerikleri kuru madde bazında %4-27, nişasta içerikleri %3-55, yağ içerikleri ise %3-7 arasında değişmektedir (Okine ve ark., 2005; Aibibula ve ark., 2007; Nelson, 2010). Aynı zamanda patates posası silajının ruminant beslemede alternatif bir kaba yem kaynağı olarak kullanılabilmesi bildirilmiştir (Jones ve ark., 1990).

**5- Şerbetçi otu:** Gelişimi için ılıman bir iklim isteyen şerbetçi otu, 7.5 metreye kadar uzarken, sarılması için yüksek direk ve aralarına gerilmiş tellere ihtiyaç duymaktadır. Şerbetçi otunun kuru ot örneklerinde yapılan analizlerde; ham protein, asit deterjanda çözünmeyen lif (ADF), nötr deterjanda çözünmeyen lif (NDF), potasyum (K), fosfor (P), kalsiyum (Ca) ve magnezyum (Mg) oranları sırasıyla; %15.76-20.8, %35.76-44.09,



%48.63-59.80, %2.12-2.20, %0.30-0.37, %0.87-1.16 ve %0.46-0.54 arasında değişmiştir. Analiz sonuçlarından da anlaşıldığı üzere şerbetçi otu hem karbonhidrat hem de protein bakımından zengin bir bitkidir. Bitkinin sahip olduğu bu içerikler ile baklagillere karbonhidrat, buğdaygillere ise protein takviyesi yapmış olacaktır. Yapılan araştırmalara göre Şerbetçi otu bitkisinden silaj da yapılabileceği öngörülmüştür.

**6-Zeytin yaprakları ve zeytin küspesi (prina):** Zeytin ağaçlarının budama, temizleme ve harmanlama işlemlerinden arta kalan yaprak ve dallarından oluşan zeytin yaprakları, kaba yemlere alternatif olarak ruminant rasyonlarında kullanılabilir. Ayrıca zeytin yaprağı, fonksiyonel değere sahip birçok biyoaktif bileşeni doğal olarak içeren yan üründür (Kaya ve Kaya, 2023). Zeytin dal ve yaprağının kimyasal içeriği budama işlemine göre farklılık göstermektedir. Genel olarak ham protein miktarı düşük ancak selüloz ve lignin miktarı yüksek olarak tespit edilmiştir (Amici ve ark., 1991). Zeytin yapraklarının kurutularak ruminant rasyonlarında düşük kaliteli kaba yemlere alternatif olarak kullanılabilmesi ifade edilmektedir (Keser ve Bilal, 2010). Zeytinin yağı çıkarıldıktan sonra geriye kalan çekirdek, kabuk ve posasından elde edilen ve bir yan ürün olan prina koyun, keçi gibi düşük besleyici değeri olan yemlerden yüksek düzeyde yararlanabilme yeteneğine sahip ruminantlar, bu yan üründen iyi düzeyde yararlanabilmektedir. Pirinanın fermente edilerek silaj haline getirilmesi, kuru olarak kullanılması, konsantre peletlerin ve çoklu besin maddesi içeren yem bloklarının bir bileşeni olarak kullanılması söz konusudur (Hadjipanayiotou, 1994; Keser ve Bilal, 2010)

**7- Üzüm posası:** Üzüm posasının hayvan yemi olarak kullanılması durumunda hayvanların hem kaba yem ihtiyacı karşılanmış olacak ve hem de çevre kirliliğinin azalmasına katkı sağlanmış olacaktır. Üzüm posasının silajı yapılarak hayvan beslemede kullanılması mümkündür. Nitekim bazı araştırmacılar (Abarghuei ve ark., 2010; Parvin ve ark., 2010; Ülger ve ark., 2017) tarafından, üzüm posasının kullanımı sadece çevre kirliliği etkisini azaltmakla kalmayıp, hayvan yeminde yaşanan sorunların da hafiflemesine neden olabileceğini ifade edilmektedir. Ayrıca kırmızı ve beyaz üzüm posaları başka yem hammaddesi veya posalarla birlikte silaj yapılarak daha kaliteli sonuçlar elde edilebilir (Ülger ve Özdemir, 2023.).

**8-Domates posası:** Domates posası, ülkemizde ağustos ve eylül aylarında taze olarak elde edilen, salça işleme sırasında açığa çıkan endüstriyel bir yan üründür. Özellikle, küçük aile işletmelerinde sıklıkla kullanılan domates posası sonbahar başlangıcında ruminant hayvanlar için kaba yem kaynağı olarak kullanılmaktadır (Denek ve Can, 2006). Domates posası gibi çeşitli posaların hayvan beslemede kaba yem kaynağı olarak kullanımı ile gerek çevre kirliliğinin önüne geçilmesi, gerekse artan yem maliyetlerinin düşürülmesi açısından işletme ekonomisine katkı sağlayacaktır (Huber, 1981; Ebeid ve ark., 2015). Domates posasının ham protein içeriği %19-22, ham yağ içeriği %11-13 ve ADL (Asit deterjan lignin) içeriği ise %7-13 arasında değişmektedir (NRC, 1989; Bakshi ve ark., 2012). Domates posası, selüloz, protein, yağ ve mineral

maddece zengin olduğundan hayvan beslemede alternatif yem kaynağı olarak kullanılabilceği bildirilmiştir (Knoblich, 2005).

**9-Elma posası:** Elmanın meyve suyu üretiminde kullanıldıktan sonra geriye kalan yan ürünüdür. Elma posaları önemli bir pektin kaynağı olmalarının yanı sıra son zamanlarda hayvan beslemede alternatif yem kaynağı olarak da kullanılmaya başlanmıştır. Süt sığırı rasyonlarında kullanılan ve endüstriyel bir yan ürün olan elma posası, taze ve kuru olarak tüketilebileceği gibi silaj şeklinde de değerlendirilebilmektedir. Su içeriğinin fazla olması nedeniyle, elma posası silajının bozulmasının engellenmesi ve dolayısıyla kullanım ömrünün uzatılabilmesi için, saman, buğday kırması ve kuru otlarla birlikte silajının yapılması tavsiye edilmektedir (Garipoğlu, 2013; Hadjipanayiotou, 1994). Elma posası, sığırlara ve atlara günde 8-10 kg, koyun ve keçilere ise yaklaşık 1 kg'a kadar verilebilmektedir. Kuru elma posası ise sığırlara 1 kg/gün düzeyinde verilebilmektedir. Elma posasının protein ve mineral madde içeriği düşük, azotsuz öz madde içeriği ise yüksektir. Azotsuz öz maddenin önemli bir bölümü hemiselüloz ve pektinden oluşmaktadır. Elma posasının amonyak ile muamele edilmesi besin maddesi içeriğini iyileştirmektedir. Yapılan bir çalışmada, üre ilave edilen elma posası silajının protein içeriğinin, kurutulmuş elma posasının protein içeriğine göre daha yüksek olduğu belirlenmiştir (Garipoğlu, 2013; Pirmohammadi, 2006). Ayrıca, karbonhidrat bakımından fakir yem bitkilerinin silolanması sırasında, elma posası ilave edilerek karbonhidrat içeriklerinin iyileştirilmesi sağlanmaktadır (Pirmohammadi, 2006).

## Sonuç

Tarımsal ürün artıkları büyük ve küçükbaş hayvan beslemede önemli bir yem kaynağı olmasına rağmen hala yeterli düzeyde kullanılmamaktadır. Tarımsal ürünlerin fabrikasyonu sonucu ortaya çıkan atıkların (posa) kaba yem olarak kullanılması ile çevreye atık olarak atılmasının önüne geçilerek çevre kirliliği önlenir ve hayvancılığımızın kaba yem açığı azalır.

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## ASSOCIATION OF IL23R RS11209026 POLYMORPHISM TO ANKYLOSING SPONDYLITIS SUSCEPTIBILITY IN ALGERIAN POPULATION

**Azzoune asmaa<sup>1-2</sup>, dahmani chahinez amira<sup>2-3</sup>, boudjema abdallah<sup>2</sup>**

**1- Ecole Supérieure en Sciences Biologiques d'Oran (ESSBO) Algérie.**

**2- Université Abdelhamid Ibn Badis Mostaganem (UMAB) Algérie.**

**3- Laboratoire de Génétique Moléculaire et Cellulaire. Université des Sciences et de la Technologie  
d'Oran Mohamed Boudiaf (USTO-MB) Algérie.**

Ankylosing spondylitis (AS) is a multifactorial disease with a significant genetic component. Although the association with HLA-B27 is well described worldwide, many other susceptibility genes have been identified. The aim of this work was to investigate the associations between SA and the IL23R rs11209026 (G>A) polymorphism.

This study was conducted on samples composed of 81 patients with AS and 116 unrelated controls from western Algeria. Genotyping was performed by real-time allelic discrimination (TaqMan). The comparison of genotypic and allelic frequencies between the two case and control groups was established by a Chi2 test of homogeneity.

Our results showed that the distributions of genotypes and alleles of the SNP IL23R rs11209026 (G>A) seem to be associated with the susceptibility to develop AS in the Algerian population.

This study suggests that the IL23R rs11209026 (G>A) polymorphism confers a predisposition effect against AS.

Keywords: Ankylosing spondylitis, IL23R, rs rs11209026, SNP, West Algeria.

**BENTHIC MARINE MACROALGAE IN ALGERIAN WEST COAST****Asmaa Mansouri<sup>1</sup>, Saadia Hellal<sup>2</sup>, A. Kerfouf<sup>3</sup>****<sup>1</sup>University center of Naama, Laboratory of Sustainable Management of Natural Resources In Arid And Semi-Arid Areas (GDRN), 45000, Algeria****<sup>2</sup>Université Tahri Mohamed Béchar****<sup>3</sup>University of Sidi Bel Abbes, Laboratory of Spaces of Ecodevelopment, 22000, Algeria****<sup>3</sup> Université Djillali Liabes, Laboratoire d'écodeveloppement des espaces, Sidi Bel Abbès, 22000, Algérie.**

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**\*Corresponding author: [kerfoufahmed@yahoo.fr](mailto:kerfoufahmed@yahoo.fr) / [ahmed.kerfouf@univ-sba.dz](mailto:ahmed.kerfouf@univ-sba.dz)****Abstract**

Generally, the benthic aquatic macroalgae is not well-known in the west coast of Algeria. In this study, a revised checklist of macroalgae of algerian west coast with an updated nomenclature and taxonomy has been update. Using currently accepted names, 22 species and infraspecific taxa of macroalgae have been identified , including Chlorophyta (3order/4family/6genus/8species), Ochrophyta (4 order/4 family/5 genus/5species) and Rhodophyta (7order/7family/8 genus/7species). The algal diversity of the algerian west coast within the Arzew Gulf is less than that within the Gulf of Oran. The Rhodophyceae occupy the most important average coverage (47.80%), followed by Chlorophyceae (33.06%) and Pheophyceae (19.14%). Given that this is the first inclusive checklist of macroalgae of west coast, it could serve as a foundation for future phycological and biogeographical studies of the taxa in the country and the region.

**Key words:** Benthic macroalgae, Checklist, Chlorophyta, Ochrophyta, Rhodophyta, Algerian west coastal.



## GENERATIVE AI FOR MAXIMUM POWER POINT TRACKING (MPPT) IN SOLAR PHOTOVOLTAIC SYSTEMS

Muhammad Mateen Afzal Awan

Electrical Engineering Department, University of Management and Technology Lahore-Sialkot

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### Abstract:

The rapid advancement of artificial intelligence (AI) has significantly impacted various fields, including renewable energy technologies. In particular, Maximum Power Point Tracking (MPPT) algorithms play a crucial role in optimizing the performance of solar photovoltaic (PV) systems. MPPT ensures that a solar panel operates at its maximum power point, accounting for variations in environmental conditions such as solar irradiance and temperature. Traditional MPPT methods, such as Perturb and Observe (P&O) and Incremental Conductance (IncCond), have limitations in terms of convergence speed and adaptability to dynamic conditions. Recently, generative AI techniques, such as Generative Adversarial Networks (GANs), reinforcement learning, and neural networks, have been explored to enhance MPPT algorithms. These AI-driven approaches offer potential improvements in predictive modeling, real-time adaptation, and fault detection, leading to better efficiency and energy yield. This paper investigates the integration of generative AI techniques into MPPT algorithms for solar PV systems, providing an overview of the current state of research, challenges, and future directions for sustainable energy solutions.

### Keywords:

Generative AI, Maximum Power Point Tracking (MPPT), Solar Photovoltaic (PV) Systems, Deep Learning, Generative Adversarial Networks (GANs), Reinforcement Learning, Optimization, Renewable Energy, Energy Efficiency, Predictive Modeling.

## ADVANCEMENTS IN PHOTOVOLTAIC EFFICIENCY: INNOVATIONS AND APPLICATIONS

**Muhammad Mateen Afzal Awan**

**Electrical Engineering Department, University of Management and Technology Lahore-Sialkot**

[mateen.afzal@skt.umat.edu.pk](mailto:mateen.afzal@skt.umat.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### **Abstract:**

Photovoltaic (PV) technology continues to drive the renewable energy revolution, with recent advancements pushing the boundaries of efficiency and cost-effectiveness. Emerging materials such as perovskites have achieved efficiencies above 30% in tandem configurations, rivaling traditional silicon-based cells. These innovations leverage improved light absorption, reduced recombination losses, and better thermal stability. Additionally, the development of nanostructured interfaces and passivation techniques has enhanced carrier transport, while advancements in manufacturing processes, such as roll-to-roll printing and 3D printing, have improved scalability and affordability. The paper also examines the role of smart inverters and energy management systems in optimizing PV system integration with existing energy grids. Despite these advancements, challenges remain in addressing energy storage limitations and recycling end-of-life modules. The paper concludes by highlighting future directions, including quantum dot photovoltaics and hybrid systems combining PV with thermal energy harvesting.

### **Keywords:**

Photovoltaics, Perovskite Solar Cells, Tandem Configurations, Nanostructures, Renewable Energy, Energy Management Systems, Solar Energy Recycling.

## STUDIES ON INTEGRATED PLANT DISEASE MANAGEMENT ON MACROPHOMINA PHASEOLINA CAUSES DRY ROOT ROT IN GROUNDNUT (ARACHIS HYPOGAEA L.)

**VIGNESH K**

Assistant Professor, Palar Agricultural College, Ambur

ORCID: 0000-0003-4484-3862

**Dr. K. SELVAM**

Assistant Professor, Palar Agricultural College, Ambur

ORCID: [0000-0002-0060-2314](https://orcid.org/0000-0002-0060-2314)

**ARSHA G**

Assistant Professor, Palar Agricultural College, Ambur

ORCID: 0000-0009-1694-9716

### ABSTRACT

Dry root rot, caused by *Macrophomina phaseolina*, is a significant disease affecting groundnut (*Arachis hypogaea* L.) production worldwide, particularly in semi-arid and tropical regions. The pathogen thrives under high temperatures, drought stress, and poorly managed soils, leading to substantial yield losses. Integrated Plant Disease Management (IPDM) approaches have emerged as effective strategies to mitigate the impact of *M. phaseolina*. Studies have highlighted the importance of combining cultural, biological, chemical, and genetic control methods for sustainable disease management.

Cultural practices such as crop rotation, proper irrigation management, and residue management reduce pathogen inoculum levels in the soil. Biological control agents, including *Trichoderma* spp., *Pseudomonas fluorescens*, and *Bacillus subtilis*, have shown promise in suppressing pathogen growth and enhancing plant resistance. Chemical fungicides, including carbendazim, thiophanate-methyl, and bio-compatible alternatives, are effective when applied judiciously. Additionally, the development and deployment of resistant or tolerant groundnut varieties offer long-term solutions to disease control.

Integrated strategies combining these approaches have demonstrated synergistic effects, resulting in reduced disease incidence and improved crop productivity. Future research should focus on optimizing IPDM packages tailored to specific agro-ecological zones, enhancing farmers' adoption, and minimizing environmental risks associated with chemical use.

This abstract underscores the need for holistic and sustainable approaches to managing dry root rot in groundnut, emphasizing the integration of multiple disease management strategies to ensure food security and environmental sustainability.

**KEY WORDS:** Dry root rot, *Macrophomina phaseolina*, IDM.

## EFFECT OF NEW GENERATION FUNGICIDES ON THE GROWTH OF ASPERGILLUS NIGER CAUSES COLLAR ROT IN GROUNDNUT (ARACHIS HYPOGAEA L.)

**VIGNESH K**

Assistant Professor, Palar Agricultural College, Ambur  
ORCID: 0000-0003-4484-3862

**Dr. K. SELVAM**

Assistant Professor, Palar Agricultural College, Ambur  
ORCID: [0000-0002-0060-2314](https://orcid.org/0000-0002-0060-2314)

**ARSHA G**

Assistant PROFESSOR, Palar Agricultural College, Ambur  
ORCID: 0000-0009-1694-9716

### ABSTRACT

Collar rot, caused by *Aspergillus niger*, is a severe fungal disease affecting groundnut (*Arachis hypogaea* L.), resulting in significant yield losses, particularly under warm and humid conditions. The disease primarily infects seedlings, causing collar region decay, wilting, and plant death. Recent advancements in fungicide development have led to the introduction of new-generation fungicides with improved efficacy, reduced environmental impact, and enhanced pathogen-specific activity. This study evaluates the effect of selected new-generation fungicides, including azoxystrobin, tebuconazole, difenoconazole, and carbendazim, on the mycelial growth and pathogenic activity of *A. niger* under both in vitro and in vivo conditions.

Results indicate that systemic fungicides, particularly azoxystrobin and tebuconazole, significantly inhibited the mycelial growth of *A. niger* at lower concentrations compared to traditional fungicides. Combination treatments, integrating contact and systemic fungicides, demonstrated synergistic effects, offering enhanced disease control. Additionally, seed treatment with these fungicides reduced seedling mortality and improved germination rates. The findings highlight the potential of these new-generation fungicides as effective tools for managing collar rot in groundnut cultivation.

Further field evaluations and integration with cultural and biological control measures are recommended to develop comprehensive and sustainable disease management strategies. This study emphasizes the importance of adopting advanced fungicidal solutions to mitigate crop losses caused by *A. niger*, ensuring improved groundnut productivity and farmer profitability.

**KEY WORDS:** Collar rot, *Aspergillus niger*, New generation fungicides

**ADVANCEMENTS IN PHOTOVOLTAIC EFFICIENCY: INNOVATIONS AND APPLICATIONS****Muhammad Mateen Afzal Awan****Electrical Engineering Department, University of Management and Technology Lahore-Sialkot****[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)****Abstract:**

Photovoltaic (PV) technology continues to drive the renewable energy revolution, with recent advancements pushing the boundaries of efficiency and cost-effectiveness. Emerging materials such as perovskites have achieved efficiencies above 30% in tandem configurations, rivaling traditional silicon-based cells. These innovations leverage improved light absorption, reduced recombination losses, and better thermal stability. Additionally, the development of nanostructured interfaces and passivation techniques has enhanced carrier transport, while advancements in manufacturing processes, such as roll-to-roll printing and 3D printing, have improved scalability and affordability. The paper also examines the role of smart inverters and energy management systems in optimizing PV system integration with existing energy grids. Despite these advancements, challenges remain in addressing energy storage limitations and recycling end-of-life modules. The paper concludes by highlighting future directions, including quantum dot photovoltaics and hybrid systems combining PV with thermal energy harvesting.

**Keywords:**

Photovoltaics, Perovskite Solar Cells, Tandem Configurations, Nanostructures, Renewable Energy, Energy Management Systems, Solar Energy Recycling.

## ORGANIC PHOTOVOLTAIC CELLS: A SUSTAINABLE APPROACH TO SOLAR ENERGY

**Muhammad Mateen Afzal Awan**

**Electrical Engineering Department, University of Management and Technology Lahore-Sialkot**

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### **Abstract:**

Organic photovoltaic (OPV) cells are at the forefront of sustainable solar energy technology due to their unique characteristics, such as flexibility, lightweight design, and low environmental impact. This paper delves into recent advancements in OPV cell research, including the development of high-performance donor-acceptor polymers and non-fullerene acceptors, which have pushed power conversion efficiencies (PCE) beyond 19%. Innovations in molecular engineering, such as side-chain manipulation and the incorporation of  $\pi$ -conjugated systems, have significantly enhanced charge transport and light absorption. The study also reviews scalable manufacturing techniques like roll-to-roll printing, which facilitates large-scale production of OPVs. However, challenges related to operational stability, degradation under UV exposure, and limited commercialization opportunities persist. Future directions are identified, including the integration of OPV cells into wearable electronics, flexible displays, and building-integrated photovoltaic (BIPV) systems. The paper concludes with a discussion on the circular economy approach to OPVs, emphasizing recycling and reuse to minimize environmental impact.

### **Keywords:**

Organic Photovoltaics, Power Conversion Efficiency, Donor-Acceptor Polymers, Flexible Solar Cells, Building-Integrated Photovoltaics, Molecular Engineering, Circular Economy.

## DETECTION, QUANTIFICATION, AND MANAGEMENT OF ANTIBIOTIC RESIDUES IN DRINKING WATER AND THEIR IMPACT ON ANTIBIOTIC RESISTANCE SPREAD IN SEMI-ARID REGIONS

EL HAJJARI Salma<sup>1</sup>

1 Faculty of Science and Technology, Al Hoceima, Morocco; Applied Chemistry; PhD Student  
(elhajjarisalma26@gmail.com)

The presence of antibiotic residues in water resources is a growing concern due to its implications for public health and environmental sustainability, especially in semi-arid regions. This study investigates the detection, quantification, and management of antibiotic residues in drinking water sources, including surface water, groundwater, and treated water in semi-arid areas such as Al Hoceima, Morocco. Advanced analytical techniques, specifically gas chromatography coupled with mass spectrometry (GC-MS), are utilized to ensure precise identification and quantification of these pollutants.

The research also explores the correlation between antibiotic residues and the propagation of antibiotic-resistant bacteria, a critical global health challenge. Findings aim to address key knowledge gaps by assessing contamination levels unique to semi-arid regions and examining the role of antibiotic residues in fostering bacterial resistance. Furthermore, the study proposes evidence-based strategies for treating and mitigating contamination in water resources, emphasizing the need for sustainable water management practices.

This research provides actionable insights for policymakers, environmental agencies, and researchers, contributing to global efforts to combat antibiotic resistance while preserving vital water ecosystems in vulnerable regions.

**Keywords:** Antibiotic residues, drinking water, semi-arid regions, antibiotic resistance, environmental risk.



## STEROIDAL ANTI-INFLAMMATORY COMPOUNDS FROM HALOGETON SATIVUS, A MOLECULAR DOCKING STUDY

Abdelbasset TAMERSIT<sup>1\*</sup>, Soumia MOUFFOUK<sup>1</sup>, Chaima MOUFFOUK<sup>1,2</sup>,  
Hamada HABA<sup>1</sup>

<sup>1</sup> Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria.

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaid, 05000 Batna, Algeria.

E-mail: [abdelbasset.tamersit@univ-batna.dz](mailto:abdelbasset.tamersit@univ-batna.dz)

### Abstract

Inflammation is a dysregulated immune response characterized by an excessive release of proinflammatory mediators, such as cytokines and prostanoids, leading to tissue damage and various pathological conditions. Natural compounds, notably triterpenoids, have recently garnered substantial interest as potential anti-inflammatory agents. Nuclear factor kappa B (NF- $\kappa$ B) is a transcription factor that can be found in almost all animal cell types and is a key player in some cancers and inflammatory responses. It can enhance the proliferation rate, reduce apoptosis, as well as creating more blood flow to ensure the survival of cancer, thus blocking the NF- $\kappa$ B pathway has potential therapeutic benefit. In this research paper we have successfully isolated two triterpenoids namely  $\beta$ -sitosterol and Daucosterol from the petroleum ether extract of the species *H. Sativus* which may have high binding affinity with the p50 subunit of NF- $\kappa$ B. From the docking results, we noticed that the sugar unit of Daucosterol forms strong hydrogen bond interactions with polar and negatively charged amino acid Tyr57 and Asp239 which plays a key role in binding of NF- $\kappa$ B to DNA at a site of DNA binding region. The bioactive  $\beta$ -sitosterol and Daucosterol exhibited high docking score of -8.3 and 9.1 kcal/mol respectively compared to dexamethasone as a standard which have binding affinity of 9.9 kcal/mol. The docking approach suffer from known limitations and in order to support these results the in vitro anti-inflammatory assays will be an interesting area for further study to exploit the biomedical applications of this promising plant.

**Keywords:** Halogeton sativus, Steroids, NF- $\kappa$ B, Anti-inflammatory, Molecular Docking.

## CHEMICAL COMPOSITION, DRUG LIKENESS AND ADME-TOXICITY PREDICTION OF THE SPECIES HALOGETON SATIVUS

Abdelbasset TAMERSIT<sup>1\*</sup>, Soumia MOUFFOUK<sup>1</sup>, Chaima MOUFFOUK<sup>1,2</sup>,  
Hamada HABA<sup>1</sup>

<sup>1</sup> Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria.

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaïd, 05000 Batna, Algeria.

\*E-mail : [abdelbasset.tamersit@univ-batna.dz](mailto:abdelbasset.tamersit@univ-batna.dz)

### Abstract:

The genus Halogeton belongs in the saltberry subtribe (Anabasinæ) of the tribe (Salsoleæ) of the goosefoot family (Chenopodiaceæ). The genus comprises about 120 species; they are widespread herbaceous or shrubby plants, especially in the brackish grounds of the moderate and subtropical regions of Europe, Asia, Africa and North America. Salsola species are well known in folk medicine of Russia, China and Bahrain where they are used for their diuretic, anti-hypertensive, anti-cancer, purgative, emollient, anti-ulcer and anti-inflammatory properties. Halogeton sativus called Remth (local name) is a small plant species, highly-branched halophytic shrub, distributed in saline lake shores, meadows with saline soils. In Algeria H. sativus is distributed in the pre-Saharan regions: Beni-ounif, Biskra, Laghouat and Msila. Since the chemical constituents in medicinal plants usually explain the use of the plants in traditional medicine; The present study was designed to investigate the presence of various phytochemicals in three different extracts (petroleum ether, ethyl acetate and n-butanol extracts) of H. sativus whole plant parts, using standard methods. The phytochemical screening results reveal the presence of various bioactive secondary metabolites including: Flavonoids, Terpenoids, Saponins, Tannins, Quinones, Anthraquinones and Coumarins. TLC analysis of all the three extracts was also performed and clearly showed the presence of promising and interesting spots with different colors. The use of various chromatographic techniques allows us to isolate two secondary metabolites. Furthermore, the physicochemical properties, drug likeness, and ADME-Tox profiling were investigated on two isolated phytosterols, and they exhibited good ADME properties with low toxicity, which shows that this class of compounds has enough potential and bioavailability to be used as drug candidates.

**Keywords:** Halogeton sativus, Extraction, Phytosterols, ADME-Tox.

## MOLECULAR DOCKING AND ADME-TOX STUDIES OF ANTIDIABETIC AGENTS ISOLATED FROM HALOGETON SATIVUS

Abdelbasset TAMERSIT<sup>1\*</sup>, Soumia MOUFFOUK<sup>1</sup>, Chaima MOUFFOUK<sup>1,2</sup>,  
Hamada HABA<sup>1</sup>

<sup>1</sup> Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria.

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaid, 05000 Batna, Algeria.

\*E-mail : [abdelbasset.tamersit@univ-batna.dz](mailto:abdelbasset.tamersit@univ-batna.dz)

### Abstract:

Diabetes mellitus termed as metabolic disorder is a collection of interlinked diseases and mainly body's inability to manage glucose level which leads to cardiovascular diseases, renal failure, neurological disorders, and many others. The drugs contemporarily used for diabetes have many inevitable side effects, and many of them have become less responsive to this multifactorial disorder. Halogeton sativus is a small annual halophytic plant which has many bioactive compounds with antidiabetic properties. The current study was designed to use computational methods to discover the best antidiabetic secondary metabolites from H. sativus specie using molecular docking approach. The binding affinity and interaction patterns of the isolated compounds were evaluated against three receptor proteins (agonists of insulin receptor, sodium-glucose cotransporter 1, and glucose transporter 2). The amino acids that were involved in structural interactions of our compounds and receptors were found to be Ser1270, Asp1143, Glu1108, Glu1115, His1057, Tyr1087, and Thr1145. These amino acids are repeatedly involved in the binding interaction of each molecule with receptor protein and therefore adapted as active amino acids of the catalytic cleft. These ligands were strictly evaluated through Lipinski's rule of five and ADME-Tox profiling which strongly supported their antihyperglycemic properties, and therefore, these natural bioactive compounds would act as agonist of IR and inhibitors of SGLT1, and GLUT2 and may lead to design potential drugs to combat diabetes with fewer or no side effects. A wet lab procedure has to be performed to further evaluate their activity as antidiabetic agents.

**Keywords:** Halogeton sativus, Antidiabetic, Molecular Docking, ADMET.

## IN SILICO HEPATOPROTECTIVE POTENTIAL OF HALOGETON SATIVUS: A PROMISING AGENTS FOR COMBATING HEPATOTOXICITY

Abdelbasset TAMERSIT<sup>1\*</sup>, Soumia MOUFFOUK<sup>1</sup>, Chaima MOUFFOUK<sup>1,2</sup>,  
Hamada HABA<sup>1</sup>

<sup>1</sup> Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria.

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaïd, 05000 Batna, Algeria.

\*E-mail: [abdelbasset.tamersit@univ-batna.dz](mailto:abdelbasset.tamersit@univ-batna.dz)

### Abstract

The liver, the most important metabolic organ of the body, performs a wide variety of vital functions. Hepatic cell injury occurs by the activation of reactive oxygen species (ROS) that are generated by carbon tetrachloride (CCl<sub>4</sub>), xenobiotics, and other toxic substances through cytochrome P450-dependent steps resulting from the covalent bond formation with lipoproteins and nucleic acids. Observing the urgent state of hepatotoxic patients worldwide, different medicinal plants and their properties can be explored to combat such free radical damage to the liver. Halogeton sativus is a small plant species, highly-branched halophytic shrub, distributed in saline lake shores and saline soils. Furthermore, certain findings have provided significant evidence demonstrating the promising hepatoprotective potentials of the genu Halogeton, which has piqued the interest of researchers to investigate further the protective effects against specific types of hepatotoxicity. Hence, the present study aims to evaluate the hepatoprotective activities using molecular docking approach of some isolated phytochemicals against TGF- $\beta$  type I Receptor and PPAR- $\alpha$ , since these target enzymes have been reported to be potent molecular mediators and regulators of hepatoprotective action. Furthermore, the physiochemical properties, drug likeness, and ADME-Tox profiling were investigated on two isolated phytosterols, and they exhibited good ADME properties with low toxicity, which shows that this class of compounds has enough potential and bioavailability to be used as drug candidates. Moreover, the results of docking analysis, indicate that several bioactive molecules showed optimistic binding affinity to receptor proteins which give a ray of hope to consider H. sativus extracts as a possible wellspring of the hepatoprotective drug to be used as an alternative medicine for treating hepatotoxicity. However, further studies are needed to establish the responsible active compounds and their possible mode of action.

**Keywords:** Halogeton sativus, Hepatoprotective activity, Docking, ADME-Tox.



## INTEGRATION IN CHEMISTRY LESSONS: ENHANCING INTERDISCIPLINARY LEARNING

**Indira Kuanyshbek** | [i.kuanyshbek@asu.edu.kz](mailto:i.kuanyshbek@asu.edu.kz)

**Danelya Latipova** | [d.latipova@asu.edu.kz](mailto:d.latipova@asu.edu.kz)

**KH.DOSMUKHAMEDOV ATYRAU UNIVERSITY**, FACULTY OF NATURAL SCIENCES,  
DEPARTMENT OF CHEMISTRY AND CHEMICAL TECHNOLOGY, ATYRAU, KAZAKHSTAN

### Abstract

Chemistry, as a central science, offers vast opportunities for interdisciplinary learning. Integrating chemistry lessons with other disciplines not only reinforces core chemical principles but also enables students to explore real-world applications, develop critical thinking, and foster creativity. This paper explores methods and examples of interdisciplinary approaches in teaching chemistry, highlighting their effectiveness in enhancing educational outcomes. By addressing thematic integration, STEM approaches, and problem-solving techniques, the study demonstrates how these strategies align with constructivist theory and contextual learning paradigms, providing students with essential skills for future challenges.

**Keywords:** Chemistry education, interdisciplinary learning, thematic integration, STEM, problem-based learning, constructivist theory, environmental applications.

### 1. Introduction

Chemistry has long been regarded as the "central science" due to its integral role in bridging multiple scientific disciplines. The interconnected nature of chemistry with physics, biology, mathematics, and environmental sciences reflects its capacity to address global challenges, such as climate change, energy sustainability, and advancements in healthcare. The interdisciplinary approach in chemistry education draws upon this characteristic, allowing students to apply their knowledge in diverse and practical contexts.

Educational theories such as constructivism emphasize the importance of building new knowledge on existing cognitive structures, while contextual learning highlights the value of situating knowledge within real-world scenarios. These pedagogical frameworks underscore the necessity of integrating chemistry with other subjects to enhance understanding, motivation, and problem-solving skills.

Furthermore, the demand for STEM (science, technology, engineering, and mathematics) professionals in the 21st century has accelerated the push toward interdisciplinary education. Integrating chemistry lessons within a broader curriculum not only enhances conceptual retention but also prepares students for careers requiring cross-disciplinary expertise.



## 2. Methods of Integrating Chemistry Lessons

### 2.1 Thematic Integration

Thematic integration involves structuring lessons around central themes that are relevant across multiple disciplines. For instance:

**Environmental Sustainability:** Lessons on the carbon cycle can integrate chemistry, biology, and geography, exploring how chemical reactions influence ecosystems and climate patterns.

**Health and Medicine:** The study of pharmaceuticals links chemistry with biology and ethics, examining drug synthesis and societal implications.

This approach helps students see the interconnectedness of concepts, making learning more engaging and applicable.

### 2.2 STEM Education

The integration of STEM fields in chemistry education is achieved through project-based learning, collaborative experiments, and the use of technology. For example:

**Experimental Design:** Students can construct and test chemical batteries, applying principles of electrochemistry and engineering design.

**Simulations:** Virtual laboratories allow students to model complex molecular interactions, enhancing their understanding of chemical processes.

These activities not only strengthen analytical and technical skills but also promote teamwork and innovation.

### 2.3 Problem-Based Learning (PBL)

PBL encourages students to tackle real-world problems using interdisciplinary approaches. Examples include:

**Water Quality Analysis:** Students test samples for contaminants, applying knowledge from chemistry, biology, and environmental science.

**Renewable Energy Solutions:** Designing biofuels or solar cells integrates principles from chemistry, physics, and engineering.

By focusing on practical problems, PBL fosters critical thinking and the ability to synthesize knowledge from multiple domains.

### 2.4 Cultural and Historical Contexts

The inclusion of historical and ethical perspectives in chemistry lessons can enrich students' understanding of the societal impact of scientific discoveries. For instance:

The history of synthetic dyes provides insights into the development of industrial chemistry and its cultural significance.

Discussions on nuclear chemistry can address ethical dilemmas related to the Manhattan Project and atomic energy.

### 3. Examples of Integration in Chemistry Lessons

#### 3.1 Chemistry and Biology

The molecular basis of biological processes provides a natural intersection between chemistry and biology. Lessons on photosynthesis can delve into the light-dependent and light-independent reactions, illustrating the role of chemical compounds like chlorophyll and ATP in sustaining life.

#### 3.2 Chemistry and Physics

Thermodynamics and kinetics offer a platform for integrating chemistry with physics. Calorimetry experiments, for example, demonstrate energy transfer and conservation laws, emphasizing their universal application across scientific fields.

#### 3.3 Chemistry and Art

The study of pigments and dyes reveals the chemical foundations of color. Students can explore how changes in molecular structure affect light absorption, linking chemistry to artistic expression and cultural history.

#### 3.4 Chemistry and Environmental Science

Real-world applications, such as analyzing air and water pollutants, highlight the role of chemistry in addressing environmental issues. These lessons can include measuring pH levels, detecting heavy metals, or evaluating greenhouse gas emissions.

### 4. Discussion and Educational Implications

The integration of chemistry lessons with other disciplines offers several educational benefits. Studies have shown that interdisciplinary approaches increase student engagement and motivation by connecting abstract concepts to tangible outcomes. Furthermore, these methods align with the goals of 21st-century education, emphasizing critical thinking, creativity, and collaboration.

However, implementing interdisciplinary lessons presents challenges, such as:

**Teacher Preparation:** Effective integration requires teachers to be proficient in multiple subjects and familiar with innovative teaching strategies.

**Curriculum Alignment:** Coordinating interdisciplinary content within standardized curricula can be complex.

**Resource Availability:** Access to laboratory equipment, technology, and reference materials is essential for successful implementation.



Addressing these challenges necessitates collaboration among educators, administrators, and policymakers. Professional development programs and investment in educational resources are critical to ensuring the success of interdisciplinary initiatives.

## 5. Conclusion

Integrating chemistry lessons with other disciplines transforms the learning process into a holistic and meaningful experience. By fostering connections between chemistry, physics, biology, and the arts, educators can enhance students' understanding of chemical principles while preparing them for interdisciplinary problem-solving.

Future research should focus on developing scalable models for interdisciplinary education, evaluating their impact on academic performance, and exploring innovative methods for curriculum design. By embracing integration, chemistry education can play a pivotal role in shaping the next generation of scientists, engineers, and informed global citizens.

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## ARTIFICIAL INTELLIGENCE-DRIVEN RECRUITMENT: OPPORTUNITIES AND CHALLENGES IN MODERN HR PRACTICES

**Dr.M.K.GANESHAN**

**Assistant Professor**

**Department of Management Studies**

**MIET Engineering College**

**Tiruchirappalli-7**

**Tamil Nadu, India**

**Mobile no. 9679523438**

**E-mail- [mkganeshanmba@gmail.com](mailto:mkganeshanmba@gmail.com)**

**<https://orcid.org/0000-0003-2407-1527>**

### **Abstract**

Artificial Intelligence is revolutionizing recruitment processes, contributing unprecedented opportunities to increase efficiency, accuracy, and candidate experience. AI-driven tools make more efficient use of talent acquisition through automated resume screening, predictive analytics, and chatbots for preliminary interviews. These innovations reduce time-to-hire and minimize biases, adopting a more diverse workforce. The adoption of AI in recruitment poses significant challenges, including algorithmic biases, ethical concerns, and data privacy issues. AI is significantly transforming recruitment processes in India. Some key statistics highlighting this impact are AI adoption in recruitment, future job creation, workplace AI utilization, and automation of HR roles. This research explores the transformative potential of AI in recruitment, examines the opportunities it presents, and addresses the challenges that HR professionals must route to integrate AI responsibly into modern practices. AI can unlock new opportunities for innovation, making HRM more dynamic and impactful in the modern workplace. This research highlights the transformative impact of AI on HR practices, offering actionable insights for future applications.

**Keywords:** Artificial intelligence, recruitment, talent acquisition, HR technology, chatbots.



## APPLICATION OF MACHINE LEARNING TO ASSESS LAND USE IN THE TIOUT OASIS (TAROUDANT REGION, MOROCCO)

**RAHIMI Abdelmejid; EL MJIRI Ikram; BOULANOUAR Wardia; SKAKNI Omar and BOUNIF Mohamed**

Laboratory of Geodynamics and Geomatics, Department of Geology, Faculty of Sciences, Chouaib Doukkali University, El Jadida, Morocco. e-mail : [mjidrahimi@yahoo.fr](mailto:mjidrahimi@yahoo.fr)

In order to manage the environment sustainably, it is essential to have tools that can characterise the spatial distribution and nature of the different categories of land cover, and monitor their spatio-temporal evolution. Over the last few decades, environmental factors such as drought and rainfall deficits have played a major role in land use change, hence the strong demand for information on groundwater resources. In order to meet these demands for detailed and accurate information, the use of spatial remote sensing has become essential. Against a backdrop of climate change and water scarcity, the Tiout oasis, located around 30 km south-east of the town of Taroudant, has seen changes in its land use and occupation in recent years. The aim of this study is to apply machine learning algorithms (Random Forest (RF) and Support Vector Machine (SVM)) to the processing of Sentinel-2 satellite images in order to produce a detailed and accurate map of the different land use categories in the Tiout oasis.

The map generated from these treatments was confirmed by NDVI (Normalized Difference Vegetation Index), calculated using Sentinel-2 satellite images. In addition to land cover, NDVI enabled us to extract information on the health and density of the vegetation. These data are essential for the sustainable management of natural resources, agricultural planning and the preservation of oasis ecosystems.

In conclusion, the integrated approach to the classification of Sentinel-2 images using Machine Learning and NDVI algorithms has proved to be a powerful tool for mapping, assessing and managing land in complex environments such as oases.

**Key words :** Machine Learning, Random Forest (RF) and Support Vector Machine (SVM); NDVI, land use, Tiout oasis.

## ASSESSMENT OF EFFECTIVE MANAGEMENT OF RECREATIONAL FACILITIES IN MUSTAPHA AGWAI POLYTECHNIC LAFIA, NASARAWA STATE NIGERIA

Mas'udd Kasimu Gayam<sup>1</sup>, Musa Adamu Keffi<sup>1</sup>, Ahmed Yarima<sup>2</sup>, Hajara Ibrahim Jubril<sup>3</sup>.

<sup>1</sup>Department of Estate Management and Valuation, Mustapha Agwai Polytechnic Lafia NASARAWA STATE NIGERIA.

<sup>2</sup>Department of Estate Management, Faculty of Earth and Environmental Sciences, Aliko Dangote University of Science and Technology Wudil Kano State Nigeria.

### Abstract

The General objectives of these research works is to assess the “**Management of Recreational Facilities in Mustapha Agwai Polytechnic Lafia Nasarawa State.**” Recreation is an essential part of human life and finds many different forms which are shaped by individual interests but also by the surrounding social construction and availability of required facilities. Recreational facilities are any medium offering the opportunity to participate in recreation. Facility Management represents the activity that generates the highest expenditure during the life cycle of a property. Related literatures by various authors on **Management of Recreational Facilities** were reviewed, survey research method was adopted in the research work. Population for the study comprises NDI & ND II for using recreational facilities and 45 ND I and 38 ND II students of Estate Management and Valuation Department. The Data collected was analysed using mean method. Among the findings of the study was that, effective maintenance culture is in place for the existing recreational facilities and that there is constant usage of the Facilities

**Keywords:** Facilities, Management, recreational Facilities, maintenance and Students.

### 1.0 INTRODUCTION

Recreation is an essential part of human life and finds many different forms which are shaped by individual interests but also by the surrounding social construction and availability of required facilities. Recreational activities can be communal or solitary, active or passive, outdoors or indoors, healthy or harmful, and useful for society or detrimental. Different schools of thought abound with regards to the meaning of recreation. Recreation can be defined as an activity that people voluntarily pursue for personal enjoyment or satisfaction, usually during their free time. Recreation has been widely regarded as an activity that includes physical, mental,

social and emotional involvement as contrasted with sheer idleness or complete rest (Samuel, Namu, Musa, Wazhi, Patrick, Bulus, & Shwargak, 2023).

Recreation involves playing, dancing, amusement activities, entertainment or other activities that pleasantly occupies one's time after work. The need to analyze the impact of the spatial distribution of recreational facilities arose as a result of the fact that the distribution of services in cities has affected urban spatial distribution in urban areas, and as a result, the proper distribution of social, economic, cultural, health facilities, sports and recreational facilities among regions and districts is one of the most important factors in preventing inequalities and the gap in the development and distribution of the appropriate space for the population in a territory (Majid, 2019 in Samuel et al., 2023).

Management is a universal phenomenon. It is a very popular and widely used term. All organizations business, political, cultural or social are involved in management because it is the management which helps and directs the various efforts towards a definite purpose. According to Harold Koontz, "Management is an art of getting things done through and with the people in formally organized groups. It is an art of creating an environment in which people can perform and individuals and can co-operate towards attainment of group goals". According to F.W. Taylor, "Management is an art of knowing what to do, when to do and see that it is done in the best and cheapest way." Therefore, we can say that good management includes both being effective and efficient. Being effective means doing the appropriate task i.e., fitting the square pegs in square holes and round pegs in round holes. Being efficient means doing the task correctly, at least possible cost with minimum wastage of resources (Haidar, 2022).

## **2.0 LITERATURE REVIEW**

### **2.1 Recreational Facilities**

Recreational facilities has been explained by Akintola Arika, (1985) in Peter et al., (2022)says, "In the third world (the developing countries) such as Nigeria there is lack of awareness of the contribution that leisure-time activities can make to the quality of life of urban residents and visitors, hence, the issue of providing recreational facilities is not taken seriously by urban planners and public officials". This situation is diametrically opposed to what obtains in more developed countries such as the U.S.A., and Britain where the provision of recreational facilities have long been made a routine component of plans for urban cities and the society at large. Raymond & Associates, (2002) in Samuel et al., (2023), conducted a survey of recreation needs and attitudes in Corpus Christi and reported that 84 percent of the city residents reported having visited a city park or park facility, while 72 percent reported visiting a city playground.

Good management is a vital aspect in the realization of set goals and objectives of any organization, institution or government especially in the case of those in charge of development of open space. It demands the need, aspiration and interests of people to be served is taken into consideration. Planning is for the people and recreation must be built around the desires and interests of the people for effective participation on the park and its users.

## **2.2 Impact of Recreational Facilities on Students' Physical Activities**

A recreational facility is defined as any facility that provides at least one physical activity opportunity to an individual to engage in, for example weightlifting or yoga (Baker, Schootman, Kelly & Barnished, 2022). University recreational facilities are important in order to avoid student's physical inactivity. According to Reed (2021), the designing of university infrastructure, including the location of recreational physical activity facilities, could be related with the physical activity patterns of university students. Despite the existence of recreational facilities in universities, some of the students did not fully utilise the facilities. Fullerton (2021) stated that while universities are allocating large financial resources for the development athletic and recreational sport facilities, university students are not taking a full advantage of the services provided. This scenario could either suggest that the university community is not physically active or they may just choose to use facilities provided by privately-owned sports and recreation centres.

## **3.0 RESEARCH METHODOLOGY**

The scope of this research work covers only Mustapha Agwai Polytechnic, Lafia Nasarawa located in the north- central part of Nigeria which serves as the doorway to Federal Capital Authority, Abuja.

### **3.1 Research Design**

A survey design was adopted in carrying out this research. Survey research design is a descriptive study which seeks or uses the sample data of an investigation to document, describe, and explain what is in existence or non-existent on the present status of a phenomenon being investigated. The survey method also made it possible to contact more subjects in a limited time than other methods would have been permitted (Wilson, Lipsey, & Derzom, 2020).

### **3.2 Population and Sample size of the study**

The population for this study comprises 7 head of units in the works department responsible for managing recreational facilities and ND 1& 2 students of Estate Management and Valuation Department. The total population is 110. The sample size for this study was 86 base on Krejcie and Morgan table for determining

sample size of a known population. A stratified sampling technique is a system of sampling in which the population is divided into segments bearing in mind the existing variables in a proposed research study.

#### 4.0 Data Discussion and Analysis

##### Analysis of the Questionnaires Administered to the Respondents

The information on the table below shows the respondents' category, number of questionnaires administered, number of questionnaires returned, number of questionnaires not returned, and response rate.

**Table 1. Questionnaires Administered to the Respondents**

Class	Total number of respondents	Questionnaire distributed	Questionnaire retrieved	Percentage
ND I	45	45	43	96%
ND II	38	38	36	95%

Source: Field Survey, 2024

**Table 2: Effect of Management of Recreational Facilities in the study area.**

S/NO	VARIABLES	SD	D	U	A	SA		X	Remark
1	Excellent.	13	24	9	17	14	226	2.9	Rejected
2	Very good.	10	21	10	7	29	274	3.6	Accepted
3	Good.	14	11	-	30	22	266	3.5	Accepted
4	Average.	2	3	-	33	39	335	4.4	Accepted
5	Poor.	19	30	7	18	3	187	2.4	Rejected

From table 2 above, Respondent accepted that recreational facilities improve academic performance with a mean score of 4.2. It was accepted that recreational facilities enhanced student's brain function with a mean score of 4.5. With a mean score of 4.4, it was accepted that recreational facilities improve student's learning activities. Also, it was accepted that recreational facilities improve student's participation in class activities with a mean score of 3.9. Finally, respondents accepted that recreational facilities helps in building communication skills and team work with a mean score of 4.1.

#### 5.0 CONCLUSION AND RECOMMENDATION

recreation is an essential part of human life and finds many different forms which are shaped by individual interests but also by the surrounding social construction and availability of required facilities. Recreational activities can be communal or solitary, active or passive, outdoors or indoors, healthy or harmful, and useful for



society or detrimental. Recreation has been widely regarded as an activity that includes physical, mental, social and emotional involvement as contrasted with sheer idleness or complete rest. The existence of recreational facilities in a university helps to create a healthy community of students who not only excel academically but are also physically active. Good management is a vital aspect in the realization of set goals and objectives of any organization, institution or government especially in the case of those in charge of development of open space. Therefore, it is gradually necessary to provide greater services that meet the demands of users, while encouraging new users to use the facilities.

### 5.3 Recommendations

Based on the findings, the following recommendation were made:

Adequate fund should be made available for the management of the existing recreational facilities in ATBU.

It is recommends that there is a need to upgrade some of the existing recreational facilities in the campus.

This study recommends that the works department should adopt management strategy such as preventive, predictive and corrective strategy in managing recreational facilities in Mustapha Agwai Polytechnic Lafia.

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## GENERATION OF ELECTRICITY FROM PIEZOELECTRIC TILES

JAHNAVI D.M

E-Mail: jahnavidm@gmail.com

Brindavan College of Engineering,

Department of Electronics and Communication Engineering

Bengaluru, India.

### Abstract

The project "Generation and Utilization of Electricity Using Footsteps as a Source of Energy" explores an innovative approach to harness renewable energy from human movement. The idea is to convert the mechanical energy generated by footsteps into electrical energy using piezoelectric materials or other energy-harvesting technologies. The project aims to design a system that captures the energy from pedestrian movement, stores it in capacitors or batteries, and then utilizes this energy for low-power applications such as lighting, sensors, or small electronic devices.

This project focuses on the integration of piezoelectric sensors, which generate electricity when subjected to mechanical pressure, such as the force exerted by footsteps. The energy produced is then stored and can be used in real-time or later, providing a sustainable power solution for areas with high foot traffic, such as shopping malls, airports, or public transportation systems. The potential benefits of this technology include reducing dependency on traditional power grids and contributing to environmental sustainability by utilizing human movement as a clean, renewable source of energy.

The energy harvested from footsteps can be used for low-power applications, including lighting systems, energy-efficient streetlights, environmental sensors, or emergency signaling devices. This approach not only contributes to reducing dependency on traditional energy sources but also promotes environmental sustainability by turning human movement into a viable and renewable energy resource. Furthermore, this system could play a key role in developing smart cities by integrating energy generation with daily human activities, making them more self-sufficient and reducing the environmental impact of urban living. This project highlights the potential for combining innovation, sustainability, and energy efficiency in the future of energy production.

**Keywords:** Electricity, Piezo-electric tiles, Energy, Sensors, Devices

## **V2V COMMUNICATION USING RADIO FREQUENCY SENSOR**

**JAHNAVI D.M**

**E-Mail: jahnavidm@gmail.com**

**Brindavan College of Engineering,**

**Department of Electronics and Communication Engineering**

**Bengaluru, India.**

### **Abstract**

There is tremendous increase of usage of vehicles in past decade. The reason for such vast utilization is due to development of Industrial Revolution. As the number of users on road increases, there is a need for safe mobility. It is the prime concern when moving from 5G to 6G Technology. Autonomous traffic system and autonomous driving are some of the measures for safe driving. Communication between vehicle-to-vehicle communication(V2V) is expected to enhance road safety, as it allows cars to communicate with each other and share information like GPS position, speed information to help drivers in avoiding accidents, lane change and many more. By staying connected, vehicles can react to each other and more efficiently communicate with each other. For example, one vehicle can send warning to other vehicle about adverse weather impending, road hazards, or traffic jam ahead, V2V communication guarantees about motor vehicle safety and also has ability to be a substitute method to increase the on-road internet service. Hence, it is important for the communication between vehicles to be reliable and continuous neighboring vehicles, and the wireless connection information. For the purpose of reliable and continuous communication, we are using a RF scheme for V2V safety communications in a highway environment.

**Keywords: 5G, Vehicles, Communication, Technology, Information**

## FIRST PRINCIPLES INVESTIGATION OF STRUCTURAL, ELASTIC, THERMOELECTRIC, ELECTRONIC AND OPTICAL PROPERTIES $XH_3$ ( $X=AC, LA$ ) FOR HYDROGEN STORAGE

S. Dahri <sup>1</sup>, A. Jabar <sup>1,2,\*</sup>, L. Bahmad <sup>3</sup>, L. B. Drissi <sup>1</sup>, and R. Ahl Laamara <sup>1</sup>

<sup>1</sup> LPHE-MS, Science Faculty, Mohammed V University in Rabat, Morocco

<sup>2</sup> LPMAT, Faculty of Sciences Ain Chock, Hassan II University of Casablanca,  
B.P. 5366 Casablanca, Morocco

<sup>3</sup> Laboratory of Condensed Matter and Interdisciplinary Sciences (LaMCScI), Faculty of Sciences,  
Mohammed V University, Av. Ibn Batouta, B. P. 1014 Rabat, Morocco

\*Corresponding author: [ja.abderrahim@gmail.com](mailto:ja.abderrahim@gmail.com) (A. J.)

### Abstract

Efficient hydrogen storage is essential for its use as an energy source. Considering the various methods, hydrogen storage in solid materials shows great promise but requires further research. This study employs density functional theory using the Wien2k, with the PBE + GGA method to determine the stability of this storage mode, and LSDA+mBJ to calculate the electronic, optical, and thermoelectric properties of  $AcH_3$  and  $LaH_3$ . The electronic properties reveal that  $XH_3$  ( $X=Ac, La$ ) exhibits a semiconducting nature with indirect energy gaps in both cases. The analysis of hydrogen storage properties determined the gravimetric hydrogen storage capacities for  $AcH_3$  and  $LaH_3$  to be 1.297 and 2.086 wt%, respectively. Calculations of the elastic constants validated the mechanical stability of these compounds. Thermoelectric characteristics, including electrical and thermal conductivity, Seebeck coefficient, electronic specific heat capacity, and Pauli magnetic susceptibility, have been evaluated, highlighting their p-type characteristics. The figure of merit indicates their potential for thermoelectric devices. Gravimetric ratios suggest significant hydrogen storage capacity, which could contribute to various transportation and energy applications.

**Keywords:** DFT; Electronic properties; Hydrogen storage properties; Optical properties; Thermoelectric properties; Elastic properties.



**IOT WEATHER STATION**

**BOBAN MATHEWS**

**ORCID: 0009-0007-5733-1811**

**E-Mail: bobanmathews05@gmail.com**

**Brindavan College of Engineering,**

**Department of Electronics and Communication Engineering**

**Bengaluru, India.**

**Abstract**

The detection of weather is a critical component to provide continuous and accurate monitoring of environmental parameters such as temperature, humidity, atmospheric pressure, and precipitation. This technology is particularly significant in applications like agriculture, where precise weather data is crucial for crop management, and in disaster preparedness, where real-time updates can help mitigate risks from extreme weather events. This project presents the design and implementation of an IoT-based weather station using the NodeMCU ESP8266 microcontroller, coupled with the DHT11 temperature and humidity sensor, the BMP180 barometric pressure sensor, and a rain sensor. The system collects real-time weather data, including temperature, humidity, atmospheric pressure, and rainfall, which are transmitted wirelessly via Wi-Fi to the Thing Speak platform. Thing Speak is used to analyze, visualize, and store the collected data, enabling remote monitoring through its user-friendly dashboard. The weather station offers a cost-effective solution for continuous environmental monitoring, with applications in smart agriculture, home automation, and meteorological studies. The project outlines the hardware setup, sensor integration, data transmission methods, and the utilization of Thing Speak for data visualization and analysis.

**Keywords: Internet of Things, DHT11 temperature, Rain sensor, Cloud Platforms, Thing Speak**







## DETERMINING THE NEED FOR DEVELOPING DIGITAL COURSEWARE FOR REAL-LIFE APPLICATIONS CHEMICAL CONCEPTS

Hassan Aliyu, Corrienna Abdul Talib and Labake Ajoke Fadipe

ORCID: <https://orcid.org/0000-0003-4929-3126>

Sokoto State University (SSU), Faculty of Education, Department of Science Education, Sokoto State,  
Nigeria

### Abstract

The primary objective of this study is to assess the exigency for the creation of digital chemistry courseware with a strong emphasis on the practical application of chemical concepts in real-world contexts. Despite the foundational role of chemistry in various industries, students and professionals often struggle to connect theoretical knowledge with practical, real-world applications. Traditional learning resources, including textbooks and lectures, frequently lack interactive and context-driven content that demonstrates how chemical principles are applied in everyday scenarios such as environmental management, pharmaceuticals, and industrial processes. Through surveys and interviews with students, educators, and industry professionals, this research evaluates perceptions regarding the current effectiveness of chemistry education materials, the challenges faced in understanding real-life applications, and the demand for digital solutions. Preliminary findings indicate that a significant gap exists between theoretical learning and practical application, with many respondents expressing interest in digital tools that provide interactive, scenario-based learning. Moreover, stakeholders identified features such as virtual laboratories, real-world case studies, and multimedia resources as key components for a digital courseware solution. This study concludes that there is a strong need for the development of a digital chemistry courseware that bridges the gap between theory and practice, fostering deeper engagement and understanding of chemistry's real-world relevance across various fields.

**Keywords:** Digital Chemistry Courseware, Real-life Chemical Applications, Chemical Concepts, Educational Technology, Curriculum Development



**ON THE EXISTENCE RESULT FOR SOME NONLINEAR PARABOLIC PROBLEMS**

**Dr. YACINI Soukaina,**

**Laboratory of Applied Mathematics and Scientific Computing,  
Sultan Moulay Slimane University.**

[yacinisoukaina@gmail.com](mailto:yacinisoukaina@gmail.com)

**Prof. BALAADICH Farah,**

**Laboratory of Applied Mathematics and Scientific Computing,  
Sultan Moulay Slimane University.**

[balaadich.edp@gmail.com](mailto:balaadich.edp@gmail.com)

**Abstract**

In this paper, we establish the existence of weak solutions under various hypotheses for the nonlinear parabolic problem under Dirichlet Boundary conditions. Our result is obtained by means of the topological degree theory for operators of the type  $L+S$ , where  $L$  is a linear densely defined maximal monotone map and  $S$  is a bounded demicontinuous map of type  $(S_+)$  with respect to a domain of  $L$ , in generalized Sobolev spaces.

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## **MACHINE LEARNING CONTRIBUTIONS TO LAND USE MAPPING IN THE URBAN AND PERI-URBAN AREAS OF MARRAKECH CITY (MOROCCO)**

**El Mjiri Ikram, Boulanouar Wardia, Rahimi Abdelmejid and Bounif Mohamed.**

Laboratory of Geodynamics and Geomatics; Department of Geology, Faculty of Science, El Jadida, Morocco.

Marrakech, located in the central-southern part of Morocco, has been subject to major changes regarding Land use and land cover (LULC), as well as environmental transformations in recent years. However, these developments and changes remain underexplored in our area.

Therefore, this research aimed to assess the effectiveness of classifiers in extracting various land use and land cover characteristics between 1987 and 2024, leveraging the potential of machine learning techniques applied to Landsat 5 TM, Landsat 8 TM, and Sentinel-2 satellite

data. Support Vector Machine (SVM) and Random Forest (RF) algorithms proved to be effective methods for illustrating the evolution of land use and land cover, as well as environmental changes. These algorithms were utilized as tools to detect these changes over a

period of 37 years and to measure the transformation of various classes.

We also calculated the areas of different land cover classes. Bare soil occupies approximately 74,141.2 hectares, vegetation covers 32,157.1 hectares, built-up areas span 9,257.96 hectares, and water bodies cover 81.11 hectares. The results from this study are important and can be utilized by local decision-makers for sustainable land management in this region.

**Keywords :** LULC, Machine Learning, SVM, RF, urban, peri-urban , Marrakech

## DECISION-SUPPORT APPROACH WITH SCHWEIZER-SKLAR WEIGHTED AGGREGATION UNDER CIRCULAR Q-RUNG ORTHOPAIR FUZZY SETS.

**Scholar. Tabish Naseem**

**Institute of Numerical Sciences, Kohat University of Science and Technology, KPK,  
Pakistan**

**tabishnaseem123@gmail.com, 03428965995**

**Dr. Jawad Ali**

**Institute of Numerical Sciences, Kohat University of Science and Technology, KPK,  
Pakistan**

**jawadsabirr@gmail.com,03459786123**

### ABSTRACT

The circular q-rung orthopair fuzzy (Crq-ROF) set is a novel generalization of the q-rung orthopair fuzzy set, where assessment information is depicted through a circular representation rather than discrete points, allowing for greater flexibility around the assessment orthopair. This paper aims to advance the theoretical framework of Crq-ROF context by introducing Schweizer-Sklar operations and exploring their algebraic properties. In line with these advancements, two types of weighted aggregation operators (AOs) are formulated: the Crq-ROF Schweizer-Sklar weighted average and the Crq-ROF Schweizer-Sklar weighted geometric operators. The fundamental characteristics of these operators are thoroughly outlined and mathematically verified. Building on these developments, we extend the multi-objective optimization by ratio analysis plus the full multiplicative form (MULTIMOORA) method to the Crq-ROF environment, providing a detailed step-by-step methodology. To demonstrate its practical applicability, the proposed approach is applied to a case study regarding selection of water purification strategy and its performance is compared with related decision-making methodologies.

**Key Words:** Circular q-rung orthopair fuzzy sets; Schweizer-Sklar operators; MULTIMOORA method; Decision-making.

**OUT-OF-SCHOOL BIOLOGICAL EDUCATION OF STUDENTS AT THE BOTANICAL GARDEN****Prof. Dr. Yuriy V. Lykholat**ORCID NO: [0000-0003-3354-8251](https://orcid.org/0000-0003-3354-8251)e-mail: [lykholat2006@ukr.net](mailto:lykholat2006@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

**PhD, Iryna M. Kofan**ORCID NO: [0000-0002-7252-1134](https://orcid.org/0000-0002-7252-1134)e-mail: [fr2008@ukr.net](mailto:fr2008@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

**PhD, Tetyana Y. Lykholat**ORCID NO: [0000-0002-5076-0572](https://orcid.org/0000-0002-5076-0572)e-mail: [lykholat2006@ukr.net](mailto:lykholat2006@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

**Prof. Dr. Olena A. Lykholat**ORCID NO: [0000-0002-3722-8602](https://orcid.org/0000-0002-3722-8602)e-mail: [lykholat2010@ukr.net](mailto:lykholat2010@ukr.net)

University of Customs and Finance, Dnipro, Ukraine

**Lecturer, Maksim O. Kvitko**ORCID NO: [0000-0002-3713-7620](https://orcid.org/0000-0002-3713-7620)e-mail: [kvitko.max@gmail.com](mailto:kvitko.max@gmail.com)

Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine

**PhD, Anatoliy M. Kabar**ORCID NO: [0009-0007-4628-6111](https://orcid.org/0009-0007-4628-6111)e-mail: [tolos@i.ua](mailto:tolos@i.ua)

Botanical Gardens of Oles' Gonchar Dnipro National University, Dnipro, Ukraine

**PhD, Pavlo P. Nechypurenko**ORCID NO: [0000-0001-5397-6523](https://orcid.org/0000-0001-5397-6523)e-mail: [acinonyxleo@kdpu.edu.ua](mailto:acinonyxleo@kdpu.edu.ua)

Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine

**ABSTRACT**

In modern conditions, the assimilation of knowledge by schoolchildren is carried out not only by mastering knowledge during lessons, but also outside the school, in particular, during work in scientific circles on the basis of scientific units according to the profile of a specific subject. Carrying out such work in institutions of extracurricular education and educational and scientific units is the basis of the educational process aimed at the creative development of the student as a person, and helps to identify the features of the professional abilities of students, which is the key to choosing their future profession. Such activities in biology, based on the individual inclinations of students, purposefully influence the development of their giftedness, environmental culture, self-improvement. Work in circles contributes to the organization of non-conflict communication between children

of different ages, the formation of work skills, the development of practical abilities. It is advisable to carry out circle work on the basis of a botanical garden.

The main direction of the botanical garden is the preservation of the phenofund of plant biodiversity of the local flora, as well as species introduced and acclimatized in regional conditions. Among the tasks considered by the circle members, special attention is paid to issues related to nature protection, increasing the productivity of agrocenoses, the effectiveness of the use of plant growth stimulants, the development of new varieties of plants, in particular fruit plants, which is an obligatory component of the formation and maintenance of a healthy lifestyle of the population of Ukraine.

Thus, the organization and conduct of circle work on the basis of the botanical garden is one of the links of the educational process and a promising form of organizing extracurricular education, mastering hard and soft skills by schoolchildren, developing students as personalities, and contributing to the identification of their individual professional abilities.

**Keywords:** environmental culture, extracurricular education, scientific circles, preservation of the phenofund, local flora.

## PROBLEMS FACING FIRST CYCLE TEACHER AND THEIR IMPACT ON CHILDRENS RIGHT TO EDUCATION IN NORTHERN SYRIA

**Dr. Housam Ibrahim: Lecturer at the Faculty of Education**

**Free Aleppo University - Azaz - Syria**

**housamlb1983@gmail.com**

**ORCID ID: <https://orcid.org/0009-0006-8042-9609>**

### **Abstract: Abstract**

This research aims to identify the challenges faced by primary school teachers and their impact on children's right to education in northern Syria. During the 2024/2025 academic year, a questionnaire was conducted in the city of Azaz and its surrounding countryside, targeting 200 male and female teachers. The findings reveal a range of significant issues affecting both teachers and students.

Inadequate in-service training was found to impair teachers' classroom performance, limiting students' opportunities for creativity and innovation. Weak administrative authority within schools has exacerbated social violence, resulting in unsafe learning environments for children. Additionally, educational supervision practices often force teachers to focus on satisfying supervisors rather than prioritizing student achievement, which negatively influences the overall quality of education.

The study also highlights the shortcomings of curriculum design and teaching methods, which frequently fail to align with students' abilities and lack an appropriate balance between theoretical knowledge and practical skills. Limited familiarity with modern educational tools among teachers has hindered the development of students' creativity, critical thinking, and essential life skills. Shifting cultural patterns and behavioral issues among students, combined with a growing dropout phenomenon, further complicate the educational landscape. Challenges extend beyond the classroom, as teachers struggle to engage with students' families due to a lack of parental involvement and the absence of parent councils. The school environment itself contributes to these difficulties, with overcrowded classrooms and a shortage of basic infrastructure such as furniture, libraries, and activity rooms for both educational and psychological support. These conditions collectively undermine educational quality and fail to uphold children's right to a safe and effective learning experience.

**Keywords:** Teachers' Challenges, Children's Right to Education, Northern Syria, Educational Quality

المشكلات التي تواجه معلمي الحلقة الأولى

وانعكاسها على حق الأطفال في التعليم في الشمال السوري

د. حسام إبراهيم : مدرس في كلية التربية - جامعة حلب الحرة - اعزاز - سوريا [housamlb1983@gmail.com](mailto:housamlb1983@gmail.com)

هدف البحث الحالي إلى التعرف على المشكلات التي تواجه معلمي الحلقة الأولى وانعكاسها على حق الأطفال في التعليم في الشمال السوري



وفي ضوء ذلك قام الباحث بتطبيق استبانة في العام الدراسي 2024/2025 في مدينة اعزاز و ريفها استهدف فيها (200) معلم ومعلمة وتم سؤالهم عن أبرز المشكلات التي تواجههم في عملهم، وتوصلت نتائج البحث إلى:

المشكلات المتعلقة بتدريب المعلمين أثناء الخدمة التي ينعكس على أدائهم داخل الصفوف المدرسية مما ال - يعطي للطالب فرصة الإبداع والابتكار  
المشكلات المتعلقة بالإدارة المدرسية وافتقاد الإدارة لصالحية ردع الطلبة ما يؤدي إلى ظهور العديد من - أشكال العنف الاجتماعي وتكون النتيجة عدم توفر مساحات آمنة للأطفال

في تحصيل الطلبة للمحافظة على ُ - المشكلات المتعلقة بالشرف التربوي، حيث يتبدد دور المعلم ويصبح هدفه إرضاء المشرف على المدرسة دخله مما ينعكس سلبا

على - التوازن بين الجانب العرفي والجانب المهاري، المشكلات المتعلقة بالمنهاج وطرائق التدريس ُ الطلبة وعدم التي تؤثر سلبا عدم مال أمتها لمستوى في تكوين المناهج

المشكلات المتعلقة بالوسائل التعليمية وعدم معرفتهم بكيفية تشغيل الوسائل التعليمية الحديثة مما ينعكس - على التلميذ في قلة الإبداع واستخدام مهارات التفكير واكتساب المهارات الحياتية والاجتماعية. المشكلات المتعلقة بالتلميذ، حيث أن تبدل الأنماط الثقافية عند جميع التلميذ وتغيرها مما ظاهرة التسرب التي تنتشر في الشمال السوري يظهر العديد من المشكلات السلوكية، وأيضا ُ - قد يؤدي على

عدم انعقاد مجالس أولياء الأمور في -، المشكلات المتعلقة بالمجتمع المحلي والتي أدت إلى خلق صعوبة لدى المعلم في التواصل مع أسر الطلبة المدرسة للتعرف عليهم، وعدم متابعة الطالب بشكل سليم المشكلات المتعلقة بالبيئة المدرسية والتي أثرت على ازدياد كثافة الطالب فيها عدم وجود التجهيزات - المدرسية من أثاث ومكتبة وغرف الأنشطة التعليمية وغرف أنشطة الدعم النفسي عندئذ يصبح التعليم بالحد الأدنى وال يحقق أي معايير للجودة

الكلمات المفتاحية: مشكلات المعلمين - الحلقة الأولى- حق الأطفال في التعليم - الشمال السوري

## “LANGUAGE, SOCIETAL SECURITY AND STABILITY: A STUDY OF THE EXPRESSIVE FORMS USED BY INFLUENTIAL PEOPLE ON TELEVISION PROGRAMMES IN NIGERIA AND THE REPUBLIC OF CONGO”

Anana MARIAM, (Ph. D)

Department of Languages

Mountain Top University

Prayer-City, Ogun State, Nigeria

[meanana@mtu.edu.ng](mailto:meanana@mtu.edu.ng)

&

Abraham NGALOUO-ANTSO (Doctorat Unique)

Department of Modern Foreign Languages

Université Marien Ngouabi

Brazzaville, Republic of Congo

[abrahamngalouo@gmail.com](mailto:abrahamngalouo@gmail.com)

### Abstract

This article studies the impact of the language of influential people on social security and stability in Nigeria and the Republic of Congo. It explores the scope of hate speech, the use of vulgar language, derogatory family expressions, slang and insulting words from certain authorities and their consequences in the interest of the population. The data to support the research was randomly selected and collected from the Nigerian television programme “Politics Today” and the Congolese national television programme. It revealed in the light of Mead’s (1934) ‘Symbolic Interactionism’ and Sacks’ (1992) ‘Conversational analysis’ that the state of each society is determined by the positive or negative roles played by language. Therefore, appropriate words uttered in pleasant tones and good dispositions (in spoken, written and sign language) can help strengthen the security and stability of a society.

However, inappropriate language use is one of the potential causes of insecurity and instability. Ultimately, this study recommends that members of society, especially the most educated, learn to choose convenient words, understand the components of language, interact and make perfect communications. Furthermore, they must meticulously and judiciously convey useful messages to the relevant authorities for diligent responses. Journalists or producers of television programmes should reserve the right to make judgments when presenting their programmes. In doing so, they will avoid negatively influencing viewers so that the security and stability of society can be maintained.

**Keywords:** Language, interactions, communication, colloquialisms, tones, security, stability

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**“SPEECH SYNTHESIS TECHNOLOGIES”****Lindita Ademi,****[lindita.ademi@unite.edu.mk](mailto:lindita.ademi@unite.edu.mk)****Valbon Ademi,****[valbon.ademi@unite.edu.mk](mailto:valbon.ademi@unite.edu.mk)****University of Tetovo, North Macedonia****ABSTRACT**

Speech synthesis is the artificial production of human speech. A computer system used for this purpose is called a speech synthesizer, and can be implemented in software or hardware products. A text-to-speech (TTS) system converts normal language text into speech; other systems render symbolic linguistic representations like phonetic transcriptions into speech. The reverse process is speech recognition. Synthesized speech can be created by concatenating pieces of recorded speech that are stored in a database. Systems differ in the size of the stored speech units; a system that stores phones or diphones provides the largest output range, but may lack clarity. For specific usage domains, the storage of entire words or sentences allows for high-quality output. Alternatively, a synthesizer can incorporate a model of the vocal tract and other human voice characteristics to create a completely "synthetic" voice output. The most important qualities of a speech synthesis system are naturalness and intelligibility. Naturalness describes how closely the output sounds like human speech, while intelligibility is the ease with which the output is understood. The ideal speech synthesizer is both natural and intelligible. Speech synthesis systems usually try to maximize both characteristics.

The two primary technologies generating synthetic speech waveforms are concatenative synthesis and formant synthesis. Each technology has strengths and weaknesses, and the intended uses of a synthesis system will typically determine which approach is used. In HMM-based synthesis the speech spectrum and excitation parameters are modeled by context dependent HMMs and during speech synthesis the HMMs are concatenated according to the input text. HMM-based speech synthesizers are able to produce natural sounding speech and their memory requirements are also relatively small.

**Keywords:** text to speech, synthesis, speech, lexicon, language.

## INTRODUCTION

The last stage in a TTS system is the actual synthesizer and it is responsible for producing the actual synthesized speech output. Several different synthesis techniques have been introduced and concatenative synthesis, rule based synthesis and some other important synthesis techniques, such as HMM-based synthesis, are covered. In concatenative synthesis small units of real recorded speech are concatenated after each other to form the final output. The best concatenation based synthesizers are able to provide relatively natural sounding synthetic speech. However, the drawback of this synthesis technique is that since most of the contextual information of the speech units is embedded in the data, the database size increases, when different phonetic contexts have to be taken into account and stored in the database to be able to provide natural sounding speech.

Rule based or formant synthesizers are mainly favored by phoneticians and phonologists as they constitute a cognitive and generative approach of the phonation mechanism. Formant synthesizers also have a much smaller memory footprint and requirements than concatenative systems making them suitable for devices having small amount of memory. The drawback of rule based synthesis is that the sound is usually quite mechanical since the rules controlling the synthesis are very difficult to develop.

## CONCATENATIVE SYNTHESIS

Connecting prerecorded natural utterances is probably the easiest way to produce intelligible and natural sounding synthetic speech. However, the drawback is that the systems are usually limited to one voice and often require more memory capacity than other methods. One of the most important aspects of concatenative synthesis is to find the correct sound unit length. The selection is usually a trade-off between longer and shorter units. With longer units high naturalness, less concatenation points and good control of coarticulation are achieved but the amount of required units and memory is increased. With shorter units, less memory is needed but the sample collecting and labeling procedures become more difficult and complex. In present systems units that are commonly used are words, syllables, demisyllables, phonemes, diphones and sometimes triphones.

In this section two well known concatenative synthesis strategies are presented, namely the unit selection synthesis and diphone synthesis. Unit selection synthesis uses a large speech database with usually fixed unit size e.g. demisyllables. The basic principle is to collect speech units in different phonetic and prosodic contexts and find the best matching sequence of units given the textual input. Another concatenative synthesis technique presented is based on concatenation of diphones and it uses a minimal speech database containing all the diphones occurring in a given language. Each unit  $u_i$  in the database is represented by a state in a state transition network and state occupancy costs are given by a measure of unit distortion i.e. target cost, and state transitions are given by a measure of the continuity distortion. The unit selection process resembles the Hidden Markov

Model based automatic speech recognition, but instead of using probabilities as in ASR, unit selection applies cost functions. The unit selection algorithm selects from the database an optimal sequence of units by finding the path through the state transition network that minimizes the combined target and continuity costs. For example, if the word to be synthesized is "appointment" and it is found in the unit database, the algorithm can choose the whole word (if it minimizes the total cost) instead of selecting individual units. By selecting longer sequences the system is able to reduce the number of segment concatenation points and it does not have to take care of how to smoothly combine say e.g. different diphones or triphones.

### **SPEECH UNIT DATABASE**

Unit selection systems usually select from a finite set of units in the speech database and try to find the best path through the given set of units. When there are no examples of units that would be relatively close to the target units, the situation can be viewed either as lacking in the database coverage or that the desired sentence to be synthesized is not in the domain of the TTS system. Therefore, to achieve good quality synthesis, the speech unit database should have a good unit coverage. In the simplest sense, this means recording more data from the speaker since with more data it is more likely that a database will contain a unit that is closer to the target unit and also likely to have a better continuity.

On the other hand, the problem of increasing the database size is that there will always be holes i.e. situations that there are no units that would be close to the target unit in the database. This is due to the phenomenon of relatively frequently occurring rare events in language. In practice, this means that common events in a language are very common but there are so many rare events that they are also common. Also, covering for example all triphone contexts in even a few phrasal conditions is impractical since the database size would increase too much for the currently available mass storage systems. Therefore, rather than trying to collect a very large database it is possible to try to select the "right" data. By "right" data, we mean that the units in the database would cover the identified acoustic and phonetic space of the language reasonably well. There are many suggestions for designing the database inventory and utterances to be recorded. For example, one solution is to first model the acoustic space of the speaker and find the units that are acoustically distinct and frequent enough to deserve coverage. In this method one first builds a cluster tree from a general speech database that has a good phonetic coverage. After creating the tree, the number of uses of each cluster is counted using typical utterances for the domain and finally utterances which have the highest score and coverage are greedily selected. This results in a manageable set of utterances and the database provides better synthesis quality (in terms of the database size) than databases that are not well constructed. Most unit selection systems use a fixed unit size, but longer contiguous segments can be selected due to the selection algorithm.

Typically, the units are based on either e.g. demisyllables, diphones or triphones but different size units can also be used.

The size of the speech database is often also reduced by utilizing various cod-ing methods on stored speech units. Another option is to reduce the number of units stored, and different unit selection methods can be used to find the balance between the database size and the quality of synthesized speech.

### **DIPHONE SYNTHESIS**

Compared to the unit selection synthesis technique, diphone synthesis uses a minimal speech database containing all the diphones occurring in a given language. In diphone synthesis, only one example of each diphone is contained in the speech database. At runtime, the target prosody of a sentence is superimposed on these minimal units by means of digital signal processing techniques such as linear predictive coding, Pitch Synchronous Overlap Add (PSOLA),

or MBROLA. Diphone synthesis usually suffers from the sonic glitches at concatenation points and the quality of the resulting speech is generally not as good as that from unit selection but more natural-sounding than the output of formant synthesizers.

Formant synthesis is based on the source-filter model of speech that is described in. In a formant synthesizer there exist two basic filter structures, namely parallel and cascade, but for a better performance a combination of them is usually applied. In theory, formant synthesis also provides an infinite number of sounds (or sound units), which makes it flexible.

Usually, at least three formants are required to produce intelligible speech. Each formant is modeled with a two-pole resonator which enables both the formant frequency that is the pole-pair frequency and its bandwidth to be specified.

Rule-based formant synthesis is based on a set of language/sound unit specific rules which are used to determine all the parameters required to synthesize the desired utterance. Some typical parameters used in the current formant synthesis systems include: fundamental frequency, voiced excitation open quotient, degree of voicing in excitation, formant frequencies and their amplitudes, frequency of an additional low frequency resonator and the intensity of the low and high frequency region.

When formant synthesis is applied in a TTS system, cascade and parallel models are usually combined and tuned to provide better quality. A well known model is the Klatt88 formant synthesizer that has been applied in several TTS systems, such as MITalk, DECTalk and Klattalk. This model includes a more complex formant synthesizer, applying both cascade and parallel models with additional resonances and anti-resonances for



nasalized sounds and a sixth formant for high frequency noise. The model also includes a bypass path to give a flat trans-fer function and radiation characteristics. Klatt88 uses a rather complex excitation model that is controlled using 39 different parameters that are updated every 5 ms. These parameters can be controlled and modified by a set of rules that are applied during synthesis. In Publication 4, a low-footprint TTS system based on formant synthesis is presented. During synthesis the parameters such as formant values and transitions are modified according to the language specific rules. It has been shown earlier that a coarse representation of formant contours for vowels, for example, using 20% and 80% points of the phoneme duration, is adequate for their correct identification and the increase in modeling complexity does not necessarily improve the identification accuracy. The best vowel identification rate is obtained by determining the formant contours based on the onset, target and the offset values of the formants. Based on these results Publication 5 studies the possibility to simplify the rules controlling formant contours by reducing the number of control points that are used to define the formant contours during speech synthesis from four to two control points. In the same publication the perceptual impact of various interpolation techniques between control points, e.g., linear interpolation, cubic spline interpolation and smoothing of the piecewise linear interpolation, was also evaluated. Although formant synthesizers already have a relatively small memory footprint, some other methods for optimizing the footprint even further have also been presented.

### **ARTICULATORY SYNTHESIS**

The basic idea behind articulatory synthesis is to produce synthetic speech by modeling the human articulatory system directly. This means that a mathematical model is defined for every organ of the human articulatory system. Thus, different models exist for example for the lungs, vocal cords, vocal tract, tongue, lips etc. and with the help of these models articulatory synthesis tries to model human speech production as closely as possible. Because of the exact modeling of the human articulatory system, articulatory synthesis would in theory be a good method to produce very natural sounding speech. However, the problem with articulatory synthesis is the complexity of the implementation, for example it is difficult to obtain data for the development of articulatory synthesis, and requirements of computational efficiency. Therefore, because of these requirements articulatory synthesis has not been widely used in real systems to the present day.

## LINEAR PREDICTIVE BASED METHODS

Similar to formant synthesis, basic linear predictive coding (LPC) is based on the source-filter model of speech, and the filter coefficients are estimated automatically from a frame of natural speech. The basis of linear prediction is that the current speech sample  $y(n)$  can be estimated from a finite number  $p$  of previous samples  $y(n-1)$  to  $y(n-p)$  by a linear combination with a small error  $e(n)$ . This results in that the speech sample  $y(n)$  can be presented as

$$y(n) = \sum_{k=1}^p a(k)y(n-k) + e(n) \quad (4.3)$$

where  $p$  is the linear prediction order and  $a(k)$  are the linear prediction coefficients that are found by minimizing the sum of squared errors over a frame. Two methods, namely the covariance method and autocorrelation method, are commonly used to calculate these coefficients, but only with the autocorrelation the filter is guaranteed to be stable.

In the synthesis phase, the excitation used is approximated by a train of impulses during voiced sounds and by a random noise during unvoiced sounds. The excitation signal is amplified and filtered with a digital filter for which the coefficients are  $a(k)$  and they are updated normally every 5-10 ms. The filter order is typically between 10 and 12 at 8 kHz sampling rate, but for higher quality, at 22 kHz sampling rate, the order is typically between 20 and 24.

The main deficiency of the ordinary LP method is that it represents an all-pole model, which means that segments containing antiformants (e.g. nasals and nasalized vowels) are poorly modeled. The quality is also relatively poor for short plosives having a time scale event shorter than the frame size used for analysis. However, modifications and extensions to the basic LP model have been introduced improving the synthesis quality. One example is the Warped Linear Prediction (WLP) model taking advantage of human hearing properties reducing the needed filter order significantly from 20-24 for 22 kHz synthesis to 10-14. The basic idea is that the unit delays in the filter are replaced by all-pass sections. Depending on the used warping function WLP provides a better frequency resolution at low frequencies and worse at high frequencies, which is however similar to human hearing properties. Several other variations of linear prediction have been developed to increase the quality compared to the basic model. With these methods the excitation signal used is different from the ordinary LP method. Some examples are e.g. Multi-pulse Linear Prediction (MLPC), where

the excitation is constructed from several pulses, Residual Excited Linear Prediction (RELP), where the error signal or residual is used as an excitation signal and the speech signal can be reconstructed exactly, and Code Excited Linear Prediction (CELP), in which a finite number of excitations are stored in a finite codebook.

### **HIDDEN MARKOV MODEL BASED SYNTHESIS**

Although many TTS systems can synthesize speech with acceptable quality, they are not able to synthesize speech with various voice characteristics such as speaker individualities and emotions. To obtain various voice characteristics in TTS systems based on the selection and concatenation of acoustical units, a large amount of speech data is needed. However, it is relatively difficult to collect and segment large amount of speech data for different languages. Moreover, storing big database in devices having only a small amount of memory is not possible. From these points of view, in order to construct a speech synthesis system that can generate various voice characteristics without big speech databases, Hidden Markov Model based speech synthesis has been proposed, see e.g. i.e. mel-cepstral coefficients. One solution is to apply the mel-cepstral analysis technique, which enables speech to be re-synthesized directly from the mel-cepstral coefficients by using a Mel Log Spectrum Approximation (MLSA) filter. The HMMs are also used to model the fundamental frequency  $F_0$  and the observation sequence for it is composed of one-dimensional continuous values and a discrete symbol which represents whether the phoneme is voiced or unvoiced. Therefore, conventional discrete or continuous HMMs can not be used for  $F_0$  modeling and to model such observation sequences, HMMs based on a multi-space probability distribution (MSD-HMM) have been proposed.

Many contextual factors have an effect on the speech spectrum, fundamental frequency pattern and sound duration, and to capture all these effects context dependent HMMs are used. However, as the number of contextual factors increases the number of possible combinations also increases exponentially, and therefore it is not possible to estimate all model parameters accurately with a limited amount of training data. To overcome this problem similar decision tree based context clustering techniques that have been applied in automatic speech recognition have also been applied in HMM-based speech synthesis. Moreover, these techniques were extended for MSD-HMMs.

During speech synthesis an HMM corresponding to the input text is constructed by concatenating the context dependent HMMs. The state durations of the constructed HMM are determined by maximizing the output probability of the state durations [130]. Similarly, the sequence of mel-cepstral coefficients and  $\log F_0$  values including the discrete voiced/unvoiced parameter is determined by maximizing the speech parameter generation algorithm described in. Finally, the speech waveform is generated directly from the mel-cepstral coefficients and  $F_0$  values by applying the MLSA filter. In HMM-based synthesis technique the speech

characteristics can be altered by modifying HMM parameters. In fact, it has been shown that voice characteristics of synthesized speech can be changed by applying a speaker adaptation technique, a speaker interpolation technique, or an eigenvoice technique. Moreover, in HMM synthesis the adaptation techniques can also be used for language adaptation. The HMMs can be trained by applying several monolingual corpora from different languages resulting in a multilingual synthesizer. During synthesis the models can then be adapted to a certain speaker by applying for example MLLR model adaptation.

## CONCLUSION

The consistent evaluation of speech synthesis systems may be difficult because of a lack of universally agreed objective evaluation criteria. Different organizations often use different speech data. The quality of speech synthesis systems also depends on the quality of the production technique (which may involve analogue or digital recording) and on the facilities used to replay the speech. Evaluating speech synthesis systems has therefore often been compromised by differences between production techniques and replay facilities.

Since 2005, however, some researchers have started to evaluate speech synthesis systems using a common speech dataset.

Speech synthesis has long been a vital assistive technology tool and its application in this area is significant and widespread. It allows environmental barriers to be removed for people with a wide range of disabilities. The longest application has been in the use of [screen readers](#) for people with visual impairment, but text-to-speech systems are now commonly used by people with [dyslexia](#) and other [reading disabilities](#) as well as by pre-literate children. They are also frequently employed to aid those with severe [speech impairment](#) usually through a dedicated [voice output communication aid](#). Work to personalize a synthetic voice to better match a person's personality or historical voice is becoming available. Currently, there are a number of [applications](#), [plugins](#) and gadgets that can read messages directly from an [e-mail client](#) and web pages from a [web browser](#) or [Google Toolbar](#).

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## THE REAL STEPS BEHIND THE CALL FOR RELIGIOUS TOLERANCE AND MODERATION

Eva KHAERİYAH

Faculty of Islamic Economics and Business, State Islamic University of KH Abdurrahman Wahid

Pekalongan

ORCID ID: <https://orcid.org/0009-0004-8055-8908>

### Abstract

Cases of religious intolerance emerged again towards the end of the year, with the rejection of Christmas celebrations in Cibinong, Bogor, and the rejection of Ahmadiyah in Kuningan as examples. Throughout 2024, 23 cases of violations of freedom of religion and belief were recorded, involving government officials, religious figures, citizens and community organizations. The Director of Imparsial, Ardi Manto Adiputra, criticized the government for being permissive towards intolerant groups, even tending to allow violations to occur. Ironically, in many cases, security forces actually ask victims to stop religious activities instead of protecting them from attacks by intolerant groups. This phenomenon shows the state's failure to guarantee the human rights of its citizens, especially religious minorities and believers, who have historically been marginalized since the beginning of the republic. History records that this marginalization began with the debate on the basis of the state at the BPUPKI session in 1945, which resulted in the compromise of the Jakarta Charter. However, seven words in the charter were deleted to maintain the integrity of the nation. Nevertheless, the position of religious and belief minorities remains in an unequal condition. This article emphasizes that calls for religious tolerance and moderation alone are not enough to overcome this problem. Concrete action is needed from the government and law enforcement to bring justice and protection to all citizens, regardless of their beliefs. The intolerance that continues to recur every year reflects the big challenge in realizing an Indonesia that truly upholds Pancasila as the basis of the state.

**Keywords:** Moderation , tolerance, and religious.

## EFFECTS MOODLE PLATFORM-ENHANCED INSTRUCTION ON MOTIVATION AND INTEREST AMONG SECONDARY SCHOOL CHEMISTRY STUDENTS IN TARABA STATE NIGERIA

Ezekiel Pius Nyatirimoh,

Department of Science Education, Federal University of Technology, Minna, Niger State

[nyatiripiuse@gmail.com](mailto:nyatiripiuse@gmail.com)

### ABSTRACT

This study investigated the Effects Moodle Platform-Enhanced Instruction on Motivation and Interest Among Secondary School Chemistry Students in Taraba State Nigeria . A Quasi-Experimental Design; Specifically Pre-test, Post-test, Non-equivalent and Non-randomized groups was adopted for the study. Two research questions and two research hypotheses were formulated for the study. Purposive sampling technique was adapted for the study. The sample size consisted of 295 second year Chemistry universities students drawn from secondary schools in Taraba State, Nigeria using an intact classes, one school was assigned experimental group and the other as control group respectively. A validated Chemistry Motivational Inventory Scales (CMIS) was used. Cronbach alpha was used to determine the reliability of the instrument and the coefficient was found to be 0.85. Data collected for CMIS was analyzed using mean rank and sum of rank to answer research question while Mann Whitney and Kruskal-Wallis were used to test the hypotheses at 0.05 alpha level of significance. The study revealed that students taught chemistry using Moodle platform enhanced instruction had significantly higher mean motivation scores than those taught using lectures method ( $N=295$ ,  $U_{\text{value}} 5966.0$ ,  $P_{\text{value}} 0.00 < 0.05$ ). There was a significant difference in the mean motivation scores of male and female students in experimental and control group ( $N=295$ ,  $df= 3$   $H_{\text{value}} 32.87$ ,  $P_{\text{value}} 0.00 < 0.05$ ). Based on the findings of the study, it was recommended among others that secondary school should implement the use of Moodle platforms enhanced instruction in teaching and learning process for the purpose of developing positive motivation and interest in students. Moodle Platform could be used on single sex to improve their motivation and interest in chemistry.

**Keywords:** Motivation, Interest, Moodle Platform-enhanced instruction and secondary schoo; Students.



## USER INTERFACES FOR BLIND AND VISION IMPAIRED PEOPLE

**1.Lindita Ademi, 2.Valbon Ademi**

**University of Tetovo, North Macedonia**

**December, 2024**

### **Abstract**

Blindness and vision impairment present significant challenges in accessing digital interfaces, limiting independence and information access for affected individuals. This paper explores the diverse impairments within this spectrum and discusses the accessibility support needed for each, followed by the role of intelligent interfaces in enhancing user interaction (UI) for this demographic. The type of blindness or vision impairments explained here are total blindness, low vision, color blindness, etc. The accessibility support for such people is used via screen readers, screen magnifiers, high-contrast modes, keyboard navigation and others. The role of intelligent interfaces is to provide context awareness, machine learning and haptic feedback, in order to enhance the user experience for such users. In the end, this paper concludes that intelligent interfaces have immense potential to enhance the user experience for blind and vision-impaired individuals by providing tailored solutions to their unique accessibility needs. Through continued innovation and collaboration, these interfaces can significantly improve the quality of life and independence for this demographic.

Keywords: Blind, Vision Impaired, Accessibility Support, Intelligent Interface, User Interface.

### **1. Introduction**

User Interface (UI) and User Experience (UX) play a pivotal role in shaping the success and adoption of digital products and services in today's highly competitive market. UI encompasses the visual elements and layout of an interface, while UX focuses on the overall feel and usability of the product. A well-designed UI/UX not only attracts users but also ensures their satisfaction and loyalty by providing intuitive navigation, clear feedback, and seamless interactions. In a

world where users expect instant gratification and effortless experiences, investing in UI/UX design is crucial for businesses to differentiate themselves, increase user engagement, and ultimately drive growth and profitability.

Accessibility support in UI/UX design is crucial for ensuring that digital products and services are usable by people with disabilities. It goes beyond compliance with regulations; it is about inclusivity and ensuring that everyone, regardless of their abilities, can access and interact with digital content. One of the key principles of accessibility in UI/UX is to provide multiple ways to access information and functionality. For example,

providing alternative text for images allows screen readers to describe the content to visually impaired users, while captions and transcripts for audio and video content benefit those with hearing impairments. Moreover, accessible design practices benefit all users, not just those with disabilities. For instance, clear and consistent navigation helps users find information quickly, while well-structured content improves readability for everyone. Accessibility also enhances user engagement and satisfaction, as users appreciate products that are easy to use and navigate. Additionally, inclusive design can improve search engine optimization (SEO) by ensuring that content is structured in a way that is easily understandable by search engines. Incorporating accessibility support in UI and UX design is not only a legal and ethical requirement but also a way to create better, more inclusive digital experiences for all users. By considering diverse needs and implementing accessible design practices, designers can create products that are more usable, engaging, and beneficial for everyone.

Blind and vision impaired users of applications face difficulties in accessing visual content such as images, charts, and graphs, as well as navigating complex layouts and interfaces. They rely heavily on screen reader software, which may struggle with untagged images or poorly structured content. Additionally, users with low vision may find it challenging to read small text or distinguish between colors, making it important for applications to provide options for larger text sizes and high-contrast color schemes. Overall, ensuring that applications are designed with accessibility in mind can greatly improve the user experience for blind and vision impaired individuals.

## 2. Kinds of Visual Impairments

Here are different kinds of vision and visual impairments:

- **Blindness:** Total loss of vision, often defined as the inability to perceive light or form images. Globally, approximately 1% of the population is considered legally blind, which means they have very low vision or no vision.
- **Low vision:** Significant visual impairment that cannot be fully corrected with glasses, contact lenses, medication, or surgery. People with low vision may have difficulty with daily activities despite using aids and devices. The prevalence of low vision varies but is estimated to affect around 2-4% of the global population.
- **Peripheral vision loss:** Decreased ability to see objects and movement outside of the direct line of vision. This can result from conditions affecting the outer edges of the retina or the optic nerve. Conditions affecting peripheral vision, such as glaucoma, affect around 2% of the population.
- **Central vision loss:** Impairment in the ability to see objects straight ahead, affecting activities like reading, driving, and recognizing faces. This can result from conditions affecting the macula, such as macular

degeneration. Macular degeneration, a common cause of central vision loss, affects around 8.7% of the global population over the age of 45.

- Night blindness: Difficulty seeing in low-light conditions, which can be caused by various conditions affecting the retina or the eye's ability to adjust to darkness. Estimates suggest that around 1-2% of the global population may experience some degree of night blindness.
- Color blindness: Inability or decreased ability to see certain colors. The most common type is red-green color blindness, where individuals have difficulty distinguishing between red and green hues. Red-green color blindness, the most common form, affects around 8% of males and 0.5% of females of Northern European descent.
- Blurred vision: Reduced sharpness or clarity of vision, making objects appear out of focus. This can be caused by refractive errors, dry eyes, or more serious eye conditions. Refractive errors, which can cause blurred vision, affect a significant portion of the population, with myopia (nearsightedness) affecting around 30% of the global population.
- Double vision (diplopia): Seeing two images of a single object, which can occur in one or both eyes and may be constant or intermittent. Double vision can be caused by eye muscle issues, nerve damage, or other conditions. The prevalence of diplopia can vary widely depending on the underlying cause, ranging from less than 1% to around 15% in certain populations.
- Photophobia: Extreme sensitivity to light, which can cause discomfort or pain in bright light conditions. Photophobia can be a symptom of various eye conditions or neurological disorders. While estimates vary, studies suggest that around 6-9% of the general population may experience photophobia to some degree.
- Visual field defects: Loss of part of the normal field of vision, which can occur due to conditions affecting the optic nerve, retina, or brain, such as glaucoma or stroke. Conditions such as glaucoma, which can lead to visual field defects, affect around 3% of the population over the age of 40.

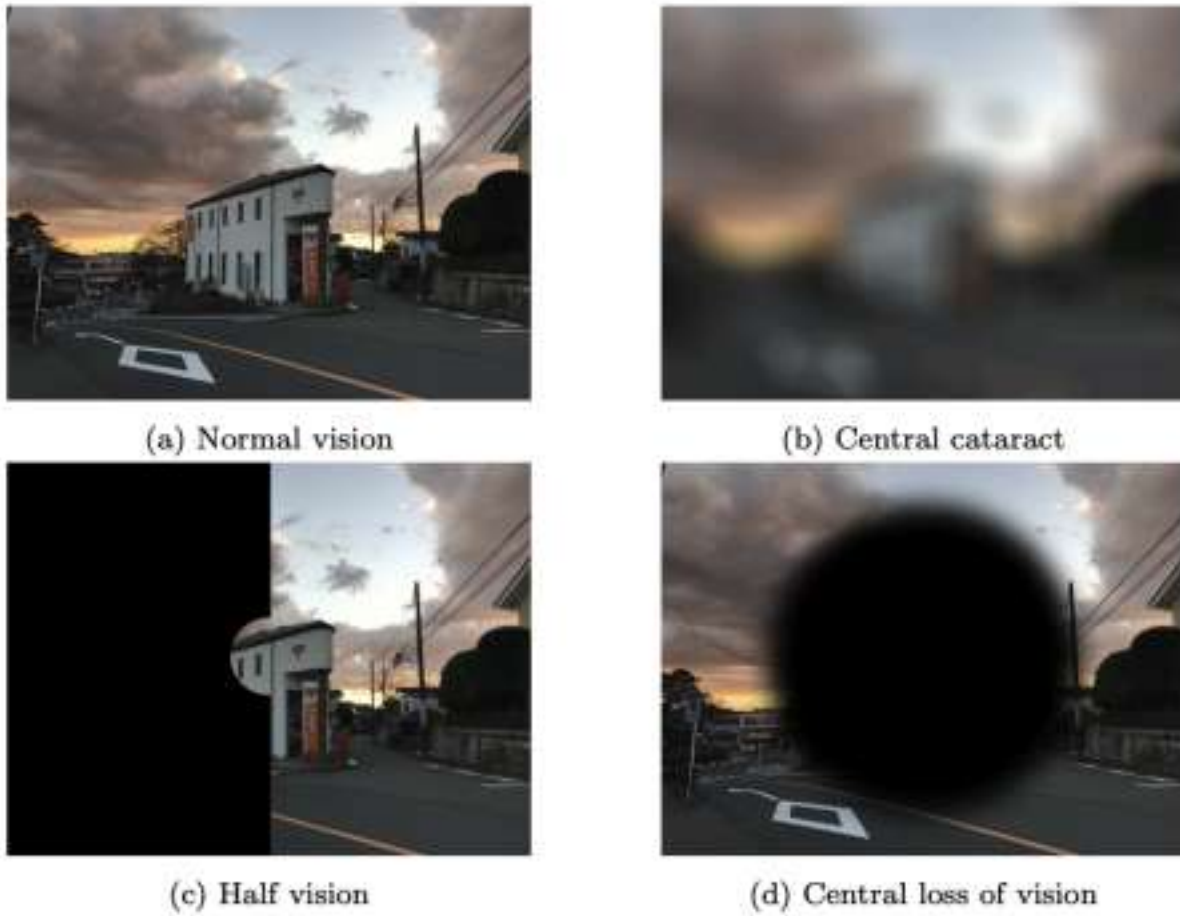


Figure 1: Types of vision examples

### 3. Designing Interfaces for Blind and Vision Impaired People

Designing interfaces for individuals who are totally blind requires careful consideration of accessibility principles to ensure that the content and functionality of the interface are perceivable, operable, understandable, and robust. Here are some key guidelines:

Firstly, the interface should be compatible with screen readers, which are software programs that convert text and graphical content into speech or braille. This includes ensuring that all text is presented in a format that can be read by screen readers, such as using proper semantic markup (e.g., headings, lists) and providing alternative text for images.

Secondly, the interface should be navigable using keyboard controls alone, as many individuals who are blind rely on keyboard shortcuts to navigate websites and applications. This includes providing skip navigation links, logical tab order, and keyboard shortcuts for common actions.

Thirdly, the interface should provide clear and concise information, using plain language and avoiding jargon or complex language. This is important for ensuring that the content is easily understandable by individuals who are blind or have low vision.

Fourthly, the interface should provide feedback to users when actions are performed, such as submitting a form or navigating to a new page. This can be done through text-based messages or audio cues to ensure that users are aware of the outcome of their actions.

Lastly, it's important to test the interface with individuals who are blind or have low vision to ensure that it is usable and meets their needs. This can help identify any issues or barriers that may exist and allow for improvements to be made to enhance accessibility. By following these guidelines, designers can create interfaces that are inclusive and accessible to individuals who are totally blind, ensuring that they can effectively interact with digital content and services.

Screen readers are software programs that enable individuals who are blind or have low vision to access and interact with digital content on computers, smartphones, and other devices. They work by converting text and graphical elements displayed on the screen into speech or braille output. Screen readers use various techniques to interpret and present content, such as reading text aloud, describing images, and providing navigation controls. Users can interact with the screen reader using keyboard commands, which allow them to navigate through content, interact with controls, and access information in a structured and meaningful way. Screen readers play a crucial role in making digital content accessible to individuals with visual impairments, enabling them to use computers and access online information independently.

Designing interfaces for people with peripheral vision loss or central vision loss involves implementing specific strategies to accommodate their needs. For individuals with peripheral vision loss, it's important to design interfaces that prioritize information in the central visual field and avoid relying on peripheral cues. This can include using larger text and buttons, reducing clutter, and ensuring that important content is placed where it can be easily seen without relying on peripheral vision. For those with central vision loss, interfaces should focus on providing high-contrast, magnifiable content that can be easily viewed using assistive technologies like screen magnifiers. Additionally, using larger fonts, providing audio descriptions for visual content, and incorporating tactile elements can enhance usability for individuals with central vision loss. Testing with users who have these specific needs can help identify and address any usability issues, ensuring that the interface is accessible and inclusive for all users.

		Background								
		Red	Orange	Yellow	Green	Blue	Violet	Black	White	Gray
Foreground	Red		Poor	Good	Poor	Poor	Poor	Good	Good	Poor
	Orange	Poor		Poor	Poor	Poor	Poor	Good	Poor	Poor
	Yellow	Good	Good		Poor	Good	Poor	Good	Poor	Good
	Green	Poor	Poor	Poor		Good	Poor	Good	Poor	Good
	Blue	Poor	Poor	Good	Good		Poor	Poor	Good	Poor
	Violet	Poor	Poor	Good	Poor	Poor		Good	Good	Poor
	Black	Poor	Good	Good	Good	Poor	Good		Good	Poor
	White	Good	Good	Good	Poor	Good	Good	Good		Good
	Gray	Poor	Poor	Good	Good	Poor	Poor	Poor	Good	

Figure 2: Examples for High Contrast Coloring

Designing interfaces for color blind individuals involves considering the use of color, contrast, and other visual cues to ensure that information is clear and distinguishable for users with color vision deficiencies. It's important to avoid relying solely on color to convey meaning, such as using color alone to indicate errors or important information. Instead, use a combination of color and other visual elements, such as icons, patterns, or text labels, to convey information effectively. Additionally, ensure that text and background colors have sufficient contrast to be easily readable for users with color vision deficiencies. Testing the interface with individuals who have color vision deficiencies can help identify any issues and ensure that the interface is accessible and usable for all users.

Designing interfaces for individuals with blurred vision involves focusing on clarity, readability, and ease of navigation. To accommodate users with blurred vision, it's important to use a clear and legible font with a large enough size to be easily readable. Additionally, use high-contrast colors between text and background to improve readability, and avoid using overly complex or decorative fonts. Providing options for users to adjust text size and contrast settings can also enhance usability for those with blurred vision. Ensuring that the interface is well-organized with clear navigation aids, such as headings, lists, and intuitive menu structures, can help users with blurred vision find and access content more easily. Testing the interface with users who have



blurred vision can provide valuable feedback and help identify areas for improvement to make the interface more accessible and user-friendly.

#### 4. Intelligent Interfaces

Intelligent interfaces refer to user interfaces that leverage artificial intelligence (AI) and machine learning (ML) technologies to enhance the interaction between humans and computers. These interfaces are designed to understand user inputs, adapt to user preferences and behavior, and provide personalized and contextually relevant responses. Intelligent interfaces can encompass a wide range of applications, including chatbots, virtual assistants, recommendation systems, and smart devices. They aim to make interactions more natural, intuitive, and efficient, enabling users to accomplish tasks more effectively and access information more easily. By analyzing data and learning from user interactions, intelligent interfaces can continuously improve and evolve, providing increasingly personalized and responsive experiences for users.

Using AI and ML in UI/UX design for providing accessibility to vision-impaired people involves several key strategies:

- Screen reader compatibility: Ensure that the interface is compatible with screen readers by providing proper semantic markup, alternative text for images, and keyboard navigation support. AI can help improve the accuracy and effectiveness of screen readers by optimizing text-to-speech conversion and providing better descriptions for complex visual elements.
- Color and contrast optimization: Use AI to automatically adjust color schemes and contrast levels to improve readability for users with vision impairments. AI can analyze color combinations and suggest alternatives that meet accessibility standards while maintaining the aesthetic appeal of the interface.
- Text and image recognition: Implement AI-powered text and image recognition to help users with vision impairments identify and interact with visual content. This can include providing audio descriptions of images, recognizing text in images, and converting it to accessible formats.
  - Voice commands and natural language processing: Integrate voice command functionality and natural language processing to allow users to navigate the interface and input text using voice commands. AI can improve the accuracy and responsiveness of voice recognition systems, making them more accessible to users with vision impairments.
  - Personalization and customization: Use AI to personalize the interface based on the user's preferences and behavior. This can include adjusting text size, color schemes, and layout to better suit individual needs and improve usability for users with vision impairments.



- User testing and feedback: Use AI to analyze user interactions and feedback to identify accessibility issues and suggest improvements. AI can help designers understand how users with vision impairments interact with the interface and make informed design decisions to improve accessibility.

By incorporating these AI and ML-driven strategies into UI/UX design, designers can create more accessible and inclusive interfaces for users with vision impairments, ultimately improving the overall user experience for all users.

## 8. Conclusions

Accessibility support is crucial for vision-impaired people to ensure they can fully participate in the digital world. It's not just about providing equal opportunities; it's also about respecting their dignity and independence. AI can significantly enhance accessibility for vision-impaired individuals by providing innovative solutions to common challenges. From screen reader optimization to personalized user experiences, AI technologies have the potential to revolutionize how we design interfaces for inclusivity. By embracing AI in UI/UX design, we can create more accessible, user-friendly interfaces that empower vision-impaired individuals to navigate the digital landscape with confidence and independence.

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## **DELIVER LIKE THE HEBREW WOMEN: THE EPISTEMOLOGY OF FAITH AND THE FATE OF EXPECTANT WOMEN IN PENTECOSTAL CHURCHES IN NIGERIA**

**Dr. Favour C. Uroko**

**Department of Religion and Cultural Studies**

**Faculty of the Social Sciences**

**University of Nigeria Nsukka**

**Favour.uroko@unn.edu.ng**

### **Abstract**

This study explores the epistemology of faith and its impact on the experiences and outcomes of expectant women in Pentecostal churches in Nigeria. The aim is to examine how faith-based teachings and practices influence the choices, behaviors, and wellbeing of these women during pregnancy. The study addresses a critical gap in understanding the intersection between religious doctrines, healthcare decisions, and maternal health outcomes in Pentecostal contexts. The statement of the problem highlights that many expectant women in Pentecostal churches rely on faith-based solutions for pregnancy-related challenges, which may result in delays in seeking medical care and adverse maternal outcomes. Using a qualitative approach, the study collects data through interviews and participant observation within selected Pentecostal churches across Nigeria. The findings reveal that faith practices, including reliance on prayer and prophetic declarations, significantly shape expectant women's attitudes toward antenatal care and healthcare utilization. While faith often provides psychological comfort and community support, it also poses risks when it discourages timely medical interventions. The study concludes that while faith is a critical aspect of many women's lives, there is a need for Pentecostal churches to integrate health education into their teachings. Recommendations include promoting collaborations between religious leaders and healthcare professionals to enhance maternal health outcomes without undermining the role of faith.



## THE BREST CHURCH UNION OF 1596 IN MODERN BELARUSIAN HISTORIOGRAPHY: MAIN CONCEPTUAL APPROACHES

**Sviatlana Marozava**

**Independent researcher, Dr. hab., Professor**

**ORCID: 0000-0003-0985-1875**

**s\_maro@tut.by**

**Grodno, Belarus**

### **Abstract**

The Brest Church Union of 1596 became the subject of scientific research in the second half of the 19th century. Belarusian science has developed different conceptual approaches and interpretations of the role of the Brest Union itself and the Uniate (Greek Catholic) Church created as a result of its conclusion in the fate of the Belarusian people and their culture. Until now, science has not developed a single and comprehensive view on this issue. It remains a subject of discussion in modern historiography. The difference in the views of researchers stems from their confessional orientation, reflects their social, political, national sympathies and antipathies, is explained by the wealth and diversity of sources, depends on the way of thinking and competence, is the result of the lack of a single criterion in approaching the problem.

Two trends can be distinguished in the study of the problem. Within the framework of the first approach, research is conducted from new methodological positions, new questions are posed and answers are sought, substantial works (monographs, dissertations, articles) are created on a solid source base, which is supplemented with new archival materials. Representatives of the second trend as a rule do not conduct a special study of the problem with the involvement of archival sources, but work on the basis of secondary, already processed material. They base their statements on selective “classical” facts and the authorities of their pre-revolutionary predecessors, and do not know or ignore the works of modern colleagues. Many works by authors of this trend are popular, polemical-apologetic in nature and ultimately distort the image of the confessional history of Belarus as a whole.

**Key words:** Belarus, Brest Church Union, historiography

## FINANCIAL ASPECT OF THE INVENTION OF BOOK PRINTING AND FRANCYSK SKARYNA – ENTREPRENEUR

**Sviatlana Marozava**

**Independent researcher, Dr. hab., Professor**

**ORCID: 0000-0003-0985-1875**

**s\_maro@tut.by**

**Grodno, Belarus**

### **Abstract**

Against the background of showing humanity's path to publishing books with the help of a printing press and typeface and the revolutionary nature of Gutenberg's invention, the commercial side of the emergence of book printing in Europe is considered. Francysk Skaryna's book printing endeavor is characterized by the unity of the realization of the educational goal and from the point of view of entrepreneurship. There are revealed the reasons for the beginning of Belarusian book printing abroad; the difficulties of establishing a printing house in the homeland; market research; used methods of ensuring the availability of books for wide circles of the population; the entrepreneurial abilities of Skaryna who combined intelligence with capital; life troubles of the 1520s – 1530s, which stopped his printing activity.

**Key words:** book printing, invention, Gutenberg, commercial interest, Francysk Skaryna, entrepreneur, Belarus

## DIGITAL LITERACY AS A CORNERSTONE: INTEGRATING ICT SKILLS INTO LIBRARY EDUCATION PROGRAMS

Umar Aliyu\*

Department of Library and Information Science, Federal Polytechnic Kaltungo, Gombe State, Nigeria  
[umaraliyu27@gmail.com](mailto:umaraliyu27@gmail.com)

Aminu Adamu Ahmed

Department of Information and Communication Technology, Federal Polytechnic Kaltungo, Gombe State, Nigeria

[aaahmed.pg@atbu.edu.ng](mailto:aaahmed.pg@atbu.edu.ng)

Mohammed Nura Musa

Department of Information and Communication Technology, Federal Polytechnic Kaltungo, Gombe State, Nigeria

[nure4it@gmail.com](mailto:nure4it@gmail.com)

Abdulbaisu Mohammed Rabiu

<sup>3</sup>Department of Management Information System, Federal Polytechnic Kaltungo, Gombe State, Nigeria  
[roxxenation94@gmail.com](mailto:roxxenation94@gmail.com)

### Abstract

In an increasingly digital world, the role of libraries extends beyond traditional resource provision to encompass the promotion of digital literacy among users. This article explores the integration of Information and Communication Technology (ICT) skills into library education programs, positioning digital literacy as a cornerstone of modern library services. By examining the current landscape of library education, the article identifies key competencies necessary for librarians to effectively support users in navigating digital resources. Through a review of successful case studies and best practices, the article highlights innovative approaches to embedding ICT skills in library curricula, emphasizing the importance of hands-on training and user-centered design. Additionally, the challenges faced in implementing these educational programs, including budget constraints and staff resistance, are addressed, along with strategies for overcoming these barriers. The findings underscore the necessity of equipping future librarians with the digital skills required to foster information literacy and empower communities. Finally, this article advocates for a comprehensive framework for library education that prioritizes digital literacy and ICT competencies, ensuring that libraries remain relevant and responsive to the evolving needs of their patrons.

**Keywords:** Digital literacy, ICT skills, Library education, Information literacy, User-centered design, Educational programs, Community empowerment,

## CREATIVE REFLECTIONS ON RECRUITMENT STANDARDS: RETHINKING COMPETENCE IN ORGANIZATIONAL HIRING PRACTICES

**Ajayi, Olayemi T.**

Department of Art and Design, The Federal Polytechnic, Ilaro, Ogun State, Nigeria

[Olayemi.ajayi@federalpolyilaro.edu.ng](mailto:Olayemi.ajayi@federalpolyilaro.edu.ng)

### **Abstract**

The reliance on polished curricula vitae (CVs) and professional attire as primary indicators of competence in recruitment processes has led many organizations to overlook candidates with genuine potential. This paper investigates the shortcomings of these superficial hiring standards, emphasizing their contribution to organizational failures and inefficiencies. The problem lies in the overvaluation of presentability, which often masks the absence of substantive skills and core values essential for organizational growth. Grounded in human capital theory, which emphasizes the value of skills and competencies over external appearances, this study explores the gap between recruitment practices and the actual demands of modern organizations. A mixed-methods approach was adopted, combining qualitative interviews with human resource professionals and quantitative analysis of recruitment outcomes from selected organizations. Data was collected from 15 organizations across different sectors to identify trends in hiring decisions and their long-term impacts. The findings reveal that organizations that prioritized applicants' intrinsic competencies over external indicators experienced higher performance outcomes, increased employee retention, and sustainable growth. Conversely, firms that relied heavily on polished CVs and professional attire reported higher turnover rates and decreased efficiency. This study concludes that traditional hiring practices rooted in superficial judgments are detrimental to organizational success. It recommends adopting merit-based recruitment strategies that evaluate candidates' core competencies, problem-solving abilities, and alignment with organizational values. Additionally, organizations should train HR personnel to recognize and mitigate biases stemming from reliance on CVs and appearances. These findings underscore the urgency of decolonizing recruitment practices to align hiring decisions with long-term organizational goals and sustainability.

Keywords: Competence, Decolonization, Hiring Practices, Organizational Growth, Recruitment Standards

## REDISTRIBUTION OF FORMER LAND USE RIGHT OF PT MALOYA ON AGRARIAN CONFLICT RESOLUTION IN CIAMIS REGENCY IN THE SUSTAINABLE AGRARIAN REFORM PROGRAM

Rudi Rubijaya<sup>1\*</sup>, Iwan Setiawan<sup>1</sup>, Tuti Karyani<sup>1</sup>, Ristina Siti Sundari<sup>2</sup>

<sup>1</sup>Department of Agricultural Science, Agricultural Faculty. Universitas Padjadjaran. Jl. Bandung-Sumedang km 21. Jatinangor. Sumedang. West Java.

<sup>1</sup><https://orcid.org/0000-0002-6004-350X>, [i.setiawan@unpad.ac.id](mailto:i.setiawan@unpad.ac.id). Department of Agricultural Science, Agricultural Faculty. Universitas Padjadjaran. Jl. Bandung-Sumedang km 21. Jatinangor. Sumedang. West Java

<sup>1</sup><https://orcid.org/0000-0002-1312-3865>, [tuti.karyani@unpad.ac.id](mailto:tuti.karyani@unpad.ac.id). Department of Agricultural Science, Agricultural Faculty. Universitas Padjadjaran. Jl. Bandung-Sumedang km 21. Jatinangor. Sumedang. West Java.

<sup>2</sup><https://orcid.org/0000-0002-5310-8520>, [ristina.sitisundari@yahoo.com](mailto:ristina.sitisundari@yahoo.com). Agribusiness Study Program, Agricultural Faculty, Universitas Perjuangan Tasikmalaya. Jl. PETA No. 177 Tasikmalaya, West Java. Indonesia.

Corresponding Author: [rubijaya@gmail.com](mailto:rubijaya@gmail.com)

### Abstract

This study examines the impact of the redistribution of former land use rights of PT Maloya on agrarian conflict resolution in Ciamis Regency within the framework of the Sustainable Agrarian Reform Program. From 1985 to 2023, significant changes occurred, including the expiration of PT Maloya's HGU in 2010 and subsequent community demands that halted its extension. By 2020, PT Maloya handed over the land to the Indonesian Army and the Ministry of ATR/BPN, leading to its allocation for various uses such as community cultivation, government projects, and military purposes. The agreed allocations included 35.48 hectares for the SPP community, 38.96 hectares for the TNI, 5.06 hectares for the Regional Government, 4.58 hectares for a prison, 18.29 hectares for the Cultivator Community, 1.6 hectares for TPU, and 9.65 hectares for the village. Despite these efforts, challenges such as commercialization, asset transfers, and conflicts persist. This research highlights the complexities and challenges in land redistribution and agrarian conflict resolution, providing insights into effective land management models and policy recommendations for sustainable agrarian reform.

Keywords: Agrarian conflict; agrarian reform; redistribution; resolution



**ANALYSIS OF MARINE SEDIMENTS FROM THE GULF OF ORAN (ALGERIAN WESTCOAST)****Ahmed Kerfouf<sup>1\*</sup>, Hbib Meliani<sup>1</sup>, Sabrine Boucetta<sup>2</sup>, Bachir Doukani<sup>1</sup>****<sup>1</sup>Laboratory of eco-development of space, University of Sidi Bel Abbès, 22000, Algeria<sup>2</sup>Laboratory of Ecobiology of Marine and Coastal Environments (EMMAL), Annaba University, Algeria.****\*Corresponding author: [kerfoufahmed@yahoo.fr](mailto:kerfoufahmed@yahoo.fr)/ [ahmed.kerfouf@univ-sba.dz](mailto:ahmed.kerfouf@univ-sba.dz)****<https://orcid.org/0000-0002-4466-1201>****Abstract**

The characterization of sediment grain sizes and their spatial distributions are key input parameters to study the nature and texture of the seabed substrate. The aim for analysis of these parameters makes it possible to identify the distribution of sediments and a better understanding of the spatial distribution of benthic communities in the soft bottoms of the Gulf of Oran. Sediment samples were collected and studied from the sampling of 36 stations, ranging in depth from -30m to -106m. All samples were analysed for their grain size distribution and statistical relationships. The study area is mainly composed of sand and gravel. The sand content of the stations studied is between 19.14% and 89.71%, and that of the gravel is between 80.0% and 2.14%. Most stations in the Gulf of Oran contain less than 5% muddy sediment. Five important sedimentary facies and a small zone of reduced mud are identified. Sand is found often mixed with gravel. The sediments of the stations near the coasts are very affected by urban and industrial pollution. The sediments at all stations are generally varied and influenced by hydrodynamics, turbidity and wave dynamics.

**Keywords:** Grain-size, spatial distribution, soft bottom, sediments, benthic communities, Gulf of Oran, Algerian West Coast.

**MARINE MOLLUSCS (BIVAVIA AND GASTEROPODA) FROM ALGERIAN WEST COAST**

**AhmedKerfouf<sup>1\*</sup>, Hbib Meliani<sup>1</sup>, Faiza Bennabi<sup>1</sup>, Patricio R. De Los Rios-Escalante<sup>3,4</sup>, Carlos Esse<sup>5</sup>,**

**<sup>1</sup>University of DjillaliLiabes,Laboratory of Eco-development of Spaces, Sidi Bel Abbes, 22000, Algeria**

**<sup>3</sup>Departamento de CienciasBiológicas y Químicas, Facultad de RecursosNaturales, UniversidadCatólica de Temuco, Casilla 15-D, Temuco, Chile <sup>4</sup>Núcleo de EstudiosAmbientales UC Temuco**

**<sup>5</sup>Instituto Iberoamericano de DesarrolloSostenible (IIDS), Unidad de CambioClimático y Medio Ambiente (UCCMA), UniversidadAutónoma de Chile, AvenidaAlemania 01090, Temuco 4780000, Chile**

**\*Corresponding author:E-mail: [kerfoufahmed@yahoo.fr](mailto:kerfoufahmed@yahoo.fr)/ [ahmed.kerfouf@univ-sba.dz](mailto:ahmed.kerfouf@univ-sba.dz)**

**Abstract**

Coastal ecosystems of northwestern Algeria have important biodiversity with regard to marine molluscs, which are insufficiently studied. This present paper made it possible to update the inventory of marine molluscs (Bivalvia and Gasatropoda) in the soft and hard bottoms along the Algerian west coast. Samples of malacofauna were collected in summer 2021. 1082 Molluscs inventoried and determined by the species, including 29 orders (15 Bivalvia and 14Gastropoda), 93families, 152genus, and 189 species. Gastropoda is represented better than Bivalvia with respectively, 100 and 89 species.The present inventory indicates that the malacological fauna is less diversified than in the other zones studied of the Algerian coast.

**Keywords:** Molluscs, Softbottom, hardbottom,Bivalvia, Gastropoda, Algerian westcoast.

## BOTANICAL DESCRIPTION, PHYTOCHEMICAL SCREENING, ISOLATION OF STEROLS AND EVALUATION OF THE CYTOTOXICITY OF THE PETROLEUM ETHER EXTRACT FROM *MOLTKIA CILIATA*

Djoughaina Makhoul<sup>1</sup>, Soumia Mouffouk<sup>1</sup>, Chaima Mouffouk<sup>1,2</sup> and Hamada Haba<sup>1</sup>

<sup>1</sup>Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria.

<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaïd, 05000 Batna, Algeria.

E-mail : [djoughaina.makhoul@univ-batna.dz](mailto:djoughaina.makhoul@univ-batna.dz)

### Abstract

*Moltkia ciliata*, a medicinal species belongs to the Boraginaceae family, it is a small, long-stemmed shrub that is wrapped with hard bristles, no longer than 30 cm long. This plant is a food sanctuary for some desert animals especially camel; it has several traditional uses in the medical field used for abdominal diseases, wound healing and treatment against scorpion stings. The species was collected from the Sahara of Algeria where the identification realized by the professor Oudjehih. However, for the phytochemical investigation, the whole of the species was macerated in a hydroalcoholic solvent (ethanol/water) for 72 h, after filtration, a liquid/liquid extraction was realized by organic solvents with increasing polarity namely: petroleum ether (PE) solvent, ethyl acetate (EtOAc) for obtained three final extracts with different masses. In the present work, we shine a light on the petroleum ether extract. To detect the presence or absence of different classes of secondary metabolites in the PE extract, phytochemical screening was carried out using various protocols and reagents. The isolation of the sterols was realized by the various chromatographic techniques including column at first step, then the precipitation in organic solvents then keep follow their purity with the Thin layer chromatography (TLC). Finally, the cytotoxicity of the PE extract was tested according to brine shrimp lethality test and the results determined in term of LC50 (lethality concentration).

**Keywords:** Chromatography, Sterols, Boraginaceae, Cytotoxicity, Maceration.



## STUDENTS ASSESSMENT OF ONLINE EDUCATION DURING THE COVID-19 EPIDEMIC: AN ANALYSIS

Zohaib Hassan Sain

[zohaib3746@gmail.com](mailto:zohaib3746@gmail.com)

Superior University, Faculty of Business & Management Sciences, Lahore, Pakistan

### ABSTRACT

The purpose of this study was to assess the online instruction given to students during the COVID-19 epidemic. At the four universities of Lahore city that were the center of the study, 600 students pursuing undergraduate, graduate, and doctoral degrees participated. A mixed method was used to design the research using both qualitative and quantitative components. An online survey was employed during the quantitative phase. Online in-depth interviews using a semi-structured interview form were carried out during the qualitative phase. Local Lahore, Pakistan, inhabitants were among the responses. The content analysis led to the identification of 21 categories and three major themes. The following themes were accomplished: "It could have been better!" for their suggestions, "Face-to-face education is better!" for the bad parts of the student's experiences, and "Better than nothing!" for the positive aspects of their experiences. It has been decided that a technology approach should be employed to further expand the distance education curriculum in the four universities that have been selected.

**KEYWORDS : COVID-19, DISTANCE EDUCATION, ONLINE EDUCATION, UNIVERSITY STUDENTS.**



**PHYTOCONSTITUENTS OF THE MEDICINAL PLANT PHILLYREA ANGUSTIFOLIA****Djoughaina Makhoul<sup>1</sup>, Soumia Mouffouk<sup>1</sup>, Chaima Mouffouk<sup>1,2</sup> and Hamada Haba<sup>1</sup>****<sup>1</sup>Laboratory of Chemistry and Environmental Chemistry (LCCE), Department of Chemistry, Faculty of Matter Sciences, Batna-1 University, 05000 Batna, Algeria.****<sup>2</sup> Department of Pharmacy, Faculty of Medicine, University of Batna 2 Mustapha Benboulaïd, 05000 Batna, Algeria.****E-mail : [djoughaina.makhoul@univ-batna.dz](mailto:djoughaina.makhoul@univ-batna.dz)****Abstract**

Phillyrea angustifolia, is a species of flowering plant belonging to the olive family Oleaceae which is a family of dicotyledonous flowering plants widely distributed in the temperate and tropical regions. Oleaceae includes 25 genera with approximately 688 species. Phillyrea angustifolia is an evergreen shrub with simple, entire, leathery, dark green, oppositely arranged leaves. Scented creamy-white flowers are borne at the leaf axils in spring and summer, and are followed by purplish black berries. This species is very useful to animals as food and shelter and, to traditional humans, as a medicinal plant and in horticulture. The present work describes the phytochemical screening of crude extracts prepared from the species Phillyrea angustifolia, the whole of the species was macerated in organic solvents with increasing polarity namely: petroleum ether (PE) solvent, ethyl acetate (EtOAc) solvent and n-BuOH solvent for 2 days (48 h) after filtration, and concentration we obtained three final extracts. For the detection of the presence or absence of different classes of secondary metabolites in the extracts, phytochemical screening was carried out using various protocols and reagents. The results of phytochemical screening revealed the presence of several classes of secondary metabolites, including flavonoids, terpanoids, saponins, tannins, quinones, alkaloids, and coumarins. Moreover, TLC chromatography of the obtained extracts showed the appearance of many spots of natural products.

**Keywords:** phytochemical screening, Secondary Metabolites, Flavonoids, Oleaceae, Chromatography

## SINO-NIGERIAN PARTNERSHIPS FOR SUSTAINABLE DEVELOPMENT: ADVANCING RENEWABLE ENERGY AND AGRICULTURAL MODERNIZATION

<sup>1</sup>Nura Abubakar Allumi, <sup>2</sup>Nor Hasni Osman, <sup>2</sup>Md. Abdul Kafi, <sup>2</sup>Mazhar Abbas, <sup>2</sup>Mohd Kamarul Irwan  
Bin Abdul Rahim, <sup>3</sup>Muhammad Zayyanu

<sup>1&2</sup>School of Technology Management and Logistics, Universiti Utara Malaysia

<sup>3</sup>Faculty of Management Sciences Usmanu Danfodiyo University Sokoto

Corresponding author: muhammadzayyanu01@gmail.com

### Abstract

This article analyzes the Nigeria-China relationship as it relates to Nigerian efforts at achieving sustainable development goals, with special emphasis on renewable energy and agricultural modernization. Despite its abundance of potential renewable energy resources and arable land, Nigeria continues to grapple with energy security and food sufficiency challenges. As a world leader in green technology and a large investor in renewable energy, China offers new ways to solve these problems. This research investigates partnership efforts particularly solar powered irrigation systems, mechanized agriculture tools and renewable energy projects such as the Katsina Wind Farm, through a literature and documents review and analysis. Results include delivery of a 30% increase in crop yields in pilot areas, significant improvements in energy access for communities previously considered unprofitable, as well as other major signifiers of meaningful progress. Such initiatives would link to the United Nations Sustainable Development Goals (SDGs) creating more opportunities for poverty reduction, clean energy and industrialization. Still, issues of sustainability, technology transfer, and the fair sharing of the benefits continues. This study emphasizes the significance of South-South cooperation, and it sheds lights into ways whereby international partnerships could accelerate sustainable development. Policy recommendations focus on increased collaboration while addressing related challenges..

**Keywords:** Nigeria-China Partnership, Sustainable Development, Green Technology Innovation, Agricultural Modernization, International Collaboration,

## INTRODUCTION

The Nigeria–China partnership has transformed into an exemplar of international cooperation in which the comparative advantage of both nations is utilized to meet some of the most pressing development problems while achieving the international sustainable development goals. Nigeria, the continent's most populous nation and largest economy, is well endowed with natural resources, including 84 million hectares of arable land and rich renewable energy resources. Still, the country struggles to overcome chronic challenges of low productivity in agriculture, energy poverty, and insufficient infrastructure. On the other hand, China being the largest investor in renewable energy and innovation of green technology in the world, presents expertise and resources; and it has technical solutions to meet the exigent development needs of a country like Nigeria. (Bian et al., 2024; Ikram et al., 2021; The State Council Information Office, 2024). China has become a very important partner of Nigeria for decades of years now. This collaboration has been very critical in yielding Foreign investment and modernization of agriculture in Nigeria with evidence suggesting that Chinese multinational enterprises (MNEs) have been particularly instrumental in this regard. Things like solar water pump and mechanised farm will go a long way in improving productivity of agriculture. Importantly, these projects are aimed at not only tackling food security concerns but also generating rural jobs as agriculture is the key component of the rural economy. Similarly, Chinese investment in renewable energy infrastructure like the Katsina Wind Farm and large-scale solar-powered projects have connected millions of Nigerians to previously unavailable energy, vital to supporting industry, livelihoods, and economic overall development (Yuguda et al., 2022). The fruits of this collaboration are nothing short of awe-inspiring. Nigeria has a growing renewable energy capacity, and solar and wind projects that can provide electricity to more than 1 million houses in remote areas have been developed. Chinese-backed mechanization initiatives have been increasing crop yields up to 30% in areas it is targeted, thus offering food security, growing local agricultural production, and developing Nigeria's export potential in agriculture (Castelein et al., 2022; Zou et al., 2024). This partnership not only brings economic benefits, but also shows a great role in global sustainable development, highlighting the great changes brought by the partnership.

The Nigeria-China partnership reflects a broader sustainable path one that aligns not only to the economic results but also the United Nations Sustainable Development Goals (SDGs) of poverty alleviation, ensuring access to affordable electricity, promoting sustainable industrialization and so forth. This partnership further confirms the essence of South-South cooperation, unravels the ways in which two countries with their own unique competencies can join forces, share their opportunities, and make joint strides to a more sustainable development path. Nevertheless, issues like environmental impacts, availability and inclusiveness of technology



transfer as well as equitable sharing of benefits have to be addressed for projects in this arena to remain sustainable in the long term. With these challenges being all part and parcel of making sure the partnership continues to be a force for good for both countries, and a contributor to global sustainable development. The Nigeria-China partnership: Contributions to Green technology Innovation and Agricultural Modernization: Published in Sept. 2023 The study seeks to identify various aspects, process, results, and a road map ahead of this partnership, that can be beneficial for other nations and goals within the sustainable development framework as a whole, even as the bilateral relations would strengthen through their collective progress. In addition, the Sino-Nigerian alliance has the ability to not only add a new dimension of green technology to Nigeria's industrial base, but also bring with it the cutting-edge innovations. This suits national development objectives and gives the country a foot up in competing with her West African neighbours. The addition of renewable energy solutions, for example, has the potential to catalyse the establishment of industrial hubs with sustainable energy, reducing reliance on fossil fuels and creating an export-led growth.

### LITERATURE REVIEW

The Nigeria-China relationship has received much scholarly and policy interest amidst Africa's development path and China's burgeoning international footprint. This literature review examines the theoretical rationale, key challenges of international collaborations, and changing patterns of Sino-Nigerian engagement in sectors important for sustainable development, particularly in the fields of clean energy and agriculture.

a)

b) Sino-African Relations: Historical Context and Strategic Interests

Geopolitical factors, economic interests and a framework of foreign development aid have influenced the historical evolution of Sino-African relations, and in particular, Sino-Nigerian relations. Alden (2007) argues that China has increasingly sought involvement and interest in Africa as its need for natural resources, new markets for Chinese goods and investment and geopolitical clout has been expanding. This strategic relationship is enshrined in mediums such as the Forum on China-Africa Cooperation (FOCAC), where bilateral deals and collaboration on infrastructure, trade, technology transfer and more are forged (Neema, 2024). Nigeria as one of Africa's powerhouses have been treated to an all-you-can-eat buffet of Chinese cash -- billions of dollars that has financed major infrastructure projects in Nigeria, including roads, bridges, and energy projects, all vital to a flagging economy crushed by falling oil prices (Rédaction Africanews, 2024; Yeping, 2024). On the one hand, Otele (2016) argues that China has prioritized Africa because of its strategic positioning in Africa while Africa is also favorably positioned by utilizing Chinese development funds mainly in the renewable energy sector and agriculture as combined the two areas hold utmost importance in Nigerian National

Development Plan (Ofosu & Sarpong,2022). Moreover, lessons learnt from a comparative exercise of Sino-Nigerian partnerships vis-a-vis similar partnerships in East Africa are worth exploring. Similarly, countries like Kenya and Ethiopia for example, these countries also received Chinese investments, used them to develop their tech infrastructures, and wooed global investors. By looking at some of those guidelines, is indeed beyond doubts an invaluable lesson for Nigeria to adopt the best practices while tailoring the guidelines to fill in the socio-economic, political and environmental gaps in Nigeria.

c) Renewable Energy and Green Technology Collaboration

Indeed, one essential aspect of recent cooperation between Nigeria and China is in the field of renewable energy, with China establishing itself as a global leader in this area. These large-scale investments in solar, wind, and hydropower projects are a manifestation of the ambitious goals of the country to reduce carbon emissions and move towards green sources of energy. China is the world leader in investment in renewable energy with billions of dollars invested in infrastructure and technology development (Lema et al., 2021). With more than US\$1 billion invested in growing clean energy solutions across Africa, such expertise, and funding are desperately needed in Nigeria to address energy poverty challenges facing over 85 million people whilst also providing clean, affordable energy solutions (Corfee-Morlot et al., 2019; Monyei et al., 2022) And projects such as the Katsina Wind Farm and a range of solar power initiatives in northern Nigeria have also been established to respond to those energy access challenges. This is part of China's wider investment in African energy projects and will offer energy access to millions. Chinese investments have also been critical in boosting Nigeria's renewable energy capacity, enabling Nigeria to increase the amount of renewable energy available in the national grid (Xiang & Oluduro, 2023). However, some projects have drawn criticism as to their environmental viability. The rapid expansion of Chinese-driven energy projects in Nigeria places them under heavy scrutiny from the authorities to prevent environmental degradation (Lv, 2023; Yuguda et al., 2022), as agricultural-land use and deforestation as well as water resources use considerations matter. In particular, it emphasizes strong environmental regulation and monitoring of such projects to ensure that they contribute to sustainable development rather than driving more environmental degradation. Across the world, smaller community-based projects supported by Chinese companies are also changing local energy profiles along with audacious projects at the other end of the scale. Off-grid solar systems, for instance, are providing rural businesses and households with the energy they need to join the digital economy. As a result, they have become micro-entrepreneurs, with many women operating businesses independently away from unstable national grids. This is perhaps a fitting example as in Nigeria the national grid collapse more than 10 times in 2024 (Arise News, 2024).

d) Agricultural Modernization and Mechanization

Agriculture as the mainstay of Nigeria's economy and second only to crude oil, is another crucial segment of Sino-Nigerian partnership (Okotie, 2018). The Food and Agriculture Organization (FAO), estimates that the agricultural sector makes up about 25% of Nigeria's GDP and provides jobs for over 35% of the population. Nonetheless, the sector still grapples with many challenges, such as low productivity, lack of modern technology and exposure to climate change effects; Nigerias' agricultural sector modernization initiative is being massively aided by China (Nwokolo et al., 2023). Some of these initiatives focus on solar pumps, mechanized tools/facilities, and many modern agricultural technologies. These innovations had a tremendous impact on agricultural production, answering not only the hunger crisis but also the demand for jobs in the countryside. Growth in crop productivity rates of as high as 30% in pilot areas, thanks to Chinese-mode mechanization projects, are aiding local food security as well as Nigeria's capacity for agricultural exports (Abiri et al., 2023; Huang & Wang, 2024).

However, all that glitters is not gold as it must be ensured that the profits and advantages of such projects are equitably accrued across the varied agricultural climates of Nigeria. As the African Union on South-South cooperation have indicated, through inclusive technology transfer rural farmers, especially women and marginalized communities must not be left behind in the modernization process, mastering local skills and developing local capacity to supplement technologies purchased through imports is also critical to the success of agricultural projects (United Nations Office for South-South Cooperation (UNOSSC) & Finance Center for South-South Cooperation, 2018). Significantly, such digital agriculture technology transfer is a relatively new area of integration and Chinese partnerships. Finally, new precision farming technologies, powered by satellite imagery and AI-based tools (smart farming), are starting to increase resource efficiency in some pilot regions. Such innovations benefit farmers in monitoring crop health, optimizing irrigation schedules, minimizing losses in post-harvest. Such technologies, if expanded, could create a ground-breaking trajectory for agricultural practices in Nigeria, and a more resilient food system able to withstand climate change.

e) South-South Cooperation: A New Paradigm in Global Development

f) The Nigeria-China partnership further highlights the increasingly important role of South-South cooperation in the global development architecture. The cooperation provides a realistic alternative to North-South development assistance, as developing countries are more interested in profit than altruism (Roy & Andrade, 2010). In contrast to the traditional donor-recipient relationship of North-South partnerships, South-South cooperation holds that cooperation proceeds on a more horizontal basis through exchange of knowledge, technology and resources; hence Nigeria and China working together to tackle common problems (Osman &

Muda, 2018). Both nations share an interest in reaching for the United Nations Sustainable Development Goals (SDGs), making this partnership especially significant. The Green Agenda is a blueprint for clean energy, sustainable agriculture, and poverty reduction, all of which correspond to the SDGs, and shows how countries of the Global South can work together to promote common goals while bolstering their positions on the global stage. Consequently, Sino–Nigerian partnership is presented not only as a win–win situation for the two countries but also as a development partnership paradigm for countries from the Global South.

### **g) Challenges and Future Directions**

Although there are some bright spots in Sino–Nigerian collaboration, many obstacles persist. Detailed criticism of the partnership is centred on the environmental sustainability of projects, equitable trade mechanisms and some form of dependence on Chinese investments. There are pros and cons of the Chinese investments in Africa, as mentioned in one of the work of scholars like Martinez (2013), the profound direction of Chinese influences in Africa is that, rather than helping Africa become self-reliant over the long-term, encourages to African dependence on varied forms of transnational capitalism, thereby weakening long-run economic independence (Vicini et al., 2022). The need to investigate the wider socio-economic effects of these partnerships including local job creation, transfer of technical know-how and long-term environmental impacts is not only vital but also sine-qua-non. It must take into account social, cultural, and environmental components as well, so that current and future generations may be able to benefit from these partnerships (Mulrow et al., 2024).

## **THEORETICAL FRAMEWORK**

Based on the vast theoretical literature, this research uses a relatively multidisciplinary theoretical framework to examine the dynamics of China-Nigeria synergetic cooperation in renewable energy and agricultural modernization. This framework builds on ideas originating from international relations, development theory, and sustainable development goals (SDGs) and offers a strong analytical foundation for exploring the outcomes and challenges of the partnership.

### **Theoretical Context of South-South Cooperation (SSC)**

The theoretical lens for this study is SSC, which addresses interactions between developing countries focused on collective action in pursuit of common challenges, common resources and mutual development. This idea is particularly important for Sino-Nigerian collaboration since both countries in the Global South trade, transfer technology and build national and human capacity on a more horizontal basis than a traditional donor-receiver relationship. SSC highlights not only mutual benefit but also knowledge and resource sharing without the conditionalities characteristic of many North–South aid relationships (Li, 2016). This model is particularly

important for African countries such as Nigeria, which are looking for alternatives to being reliant on the Global North. Since two countries of the Global South can build development strategies based on interests, Sino-Nigerian relations are a model of how things can work. With its potential for agriculture and need for sustainable energy, Nigeria is a good fit for an expanded Chinese footprint in Africa and the promotion of green technology projects that China has led. Applying this framework enables the research to hone in on the co-benefits of energy–agriculture collaborations, specifically how South–South exchanges fortify these sectors.

#### h) Dependency Theory

Dependency theory, which originated from the works of scholars like Frank (1972) and Amin (1974), posits that economic dependency on foreign powers and multinational corporations can perpetuate underdevelopment. This theory is relevant in analyzing the risks associated with Sino-Nigerian cooperation. While Chinese investments bring significant benefits, critics argue that they may deepen Nigeria's dependence on external capital and technology, potentially stunting local innovation and economic autonomy.

According to Kaplinsky (2009), while Chinese investments in Africa have generated economic growth, they also create dependency relationships in sectors like energy and agriculture. This dependence could hinder Nigeria's ability to independently innovate and control its key industries, thereby limiting long-term self-sufficiency. Therefore, understanding the balance between collaboration and economic autonomy is crucial to evaluating the true impact of Sino-Nigerian cooperation.

#### i) Innovation Systems Theory

Innovation systems theory, particularly in the context of global value chains and technological diffusion, emphasizes the importance of institutions, policies, and practices that foster innovation and knowledge transfer across borders. This framework helps understand how China's technological expertise, particularly in renewable energy, is being transferred to Nigeria. As noted by Lundvall et al., (2009), innovation systems encompass the relationships between actors such as government bodies, universities, industries, and international partners. In this case, the role of Chinese multinational enterprises (MNEs) is significant in transferring knowledge and technology to Nigeria's renewable energy sector. The adoption of solar and wind energy technologies in Nigeria, as part of this cooperation, exemplifies innovation systems in action. Chinese firms bring not only financial investments but also technical expertise in the form of technology and systems that have been successfully implemented in China. This process of knowledge transfer and the development of local capacity can support Nigeria's efforts to transition to a greener, more sustainable energy economy. However, the effectiveness of this transfer depends on local policy frameworks and the alignment of both countries' development priorities.

j) Sustainable Development Goals (SDGs) Framework

The United Nations Sustainable Development Goals (SDGs) provide a guiding framework for the analysis of Sino-Nigerian cooperation, especially concerning clean energy (SDG 7), sustainable agriculture (SDG 2), and decent work and economic growth (SDG 8). China and Nigeria's partnership directly supports these SDGs through collaborative efforts in renewable energy expansion and agricultural modernization. The SDG framework is particularly useful in evaluating how these collaborations align with global objectives for poverty reduction, sustainable economic growth, and environmental sustainability. As noted by Okoroafor and Anuforo (2012), SDGs aim to address interconnected challenges, and Sino-Nigerian cooperation embodies these goals by promoting clean energy solutions, fostering economic resilience, and reducing food insecurity in Nigeria. The study will assess how this collaboration contributes to Nigeria's progress toward achieving these global goals, with a focus on energy access and agricultural productivity.

k) Global Governance and Global Value Chains

Global governance theory provides insight into the role of international institutions and agreements in shaping bilateral partnerships between countries. This theory examines how global institutions, such as the United Nations and World Trade Organization, influence national policies and shape international cooperation. In the case of Sino-Nigerian relations, global governance frameworks facilitate dialogue and policy alignment on issues such as climate change, renewable energy, and trade. Furthermore, global value chains (GVCs) theory explores how production, technology, and services are distributed across borders, and how countries participate in and benefit from these networks. For Nigeria, Chinese investments in energy infrastructure and agricultural technologies position the country within the global value chains of green energy and agribusiness. Understanding Nigeria's role within these chains is critical for evaluating its long-term development prospects and the impact of Sino-Nigerian cooperation on local industries and employment. What is lost in a purely realist interpretation of Sino-Nigerian relations is the normative dimension revealed in this element of global governance theory. This theory prioritizes equitable distribution of resources and joint responsibility for global challenges. Using this framework will allow the study to assess whether the benefits of these partnerships are distributed according to principles of fairness and sustainability more broadly.

## METHODOLOGY

This study adopts a **qualitative document review** approach, relying exclusively on extant literature and relevant publicly available documents to explore the mechanisms, outcomes, and challenges of Sino-Nigerian cooperation in the fields of renewable energy and agricultural modernization. The research is based on a systematic analysis of secondary data, including scholarly articles, government reports, policy documents, and



international development publications. This methodology is suitable for examining the depth and scope of Sino-Nigerian relations without primary data collection or fieldwork. Its focusing on the examination of existing literature and documents related to Sino-Nigerian cooperation. By reviewing relevant documents, the study seeks to identify and analyze key themes such as technological transfer, investment flows, and collaborative initiatives in renewable energy and agriculture. This approach will also allow for a critical assessment of the impact of these collaborations on Nigeria's development goals, particularly in the areas of energy access and agricultural productivity. Given that the partnership between Nigeria and China spans multiple sectors, the research will focus on identifying patterns and outcomes specific to the energy and agricultural sectors. The document review will offer insights into how Chinese investments and technology transfer have influenced Nigeria's policy frameworks, infrastructure, and capacity building in these areas.

### **DISCUSSION AND ANALYSIS**

This development of South-South cooperation is expected to be bolstered with the assistance of Nigeria and China in renewable energy and agricultural modernization. Tapping on Chinese creative (technology) and Nigerian material (resources) capacity covers significant goals of SDGs clean energy, poverty, food. This part examines the results, hurdles, and ramifications of this collaboration.

#### **Unlocking Renewable Energy Access and Sustainability**

During the last decade, China has been the world's largest investor in renewable energy (Ezekwem & Muthusamy, 2023), especially in the solar and wind energy technology branches. Such has been the impact on Nigeria as energy access is still a major challenge. Close to 90 million Nigerians still do not have dependable access to electricity, particularly in rural and underserved regions. One of the areas that these investments have impacted is in closing the gap where necessary. An example of this has been the Katsina Wind Farm as well as many solar plants, which has contributed to the national renewable energy capacity capacity that has provided energy for more than 1 million homes. Such interventions are part of Nigeria's Vision 30:30:30 aimed at achieving 30% renewable energy by 2030. Chinese MNEs have played a key role in transferring technology and expertise for the success of these projects. Furthermore, low-interest loans and grants from Chinese financial models have made it possible for Nigeria to pursue large-scale renewable energy projects without running into unsustainable debt. As the International Renewable Energy Agency (IRENA) noted, the Chinese investments having substantially freed Nigeria from its energy deficit problem also aided the country in her energy mix diversification endeavors.

However, challenges remain. Others worry about the environmental viability of some projects, and the durability of Chinese infrastructure solutions. The technology transfer from China has been an important



component, but Nigeria must project its own capacity in operation and maintenance, and in enterprise-development to install and expand these energy systems so that the country can make renewable sources sustainable in the long run. What is more, improving the reliability of renewable energy systems can also be achieved by the incorporation of storage technologies like lithium-ion batteries. These types of storage can provide energy when solar or wind energy is not available, which is one of the biggest constraints of renewables. Partnerships that incorporate these innovations should be a priority for policymakers to capture the maximum impact from renewable projects.

### **Modernization of agriculture; increasing productivity and food security**

Agriculture is also the backbone of Nigeria, employing more than 70 percent of the population. For decades, the sector has been plagued by low productivity, poor infrastructure and underinvestment. For Nigeria, China has aided Nigerian agricultural modernization by supplying mechanized farming implements, irrigation infrastructure, and trainings to local farmers. Over and above that, these interventions address food insecurity and raise agricultural productivity, which is essential in lifting people out of poverty and activating local economy and markets. The use of small solar-powered irrigation systems and the introduction of small mechanized farming equipment is one of the biggest successes of this program. Such initiatives have gone a long way in boosting productivity areas in rural Nigeria. Pilot projects experimenting with Chinese technology, for instance, have shown crop yield increases of 30 percent, to both feed local populations and emerged food export potential. Agriculture has been one of the most proficient entities to adopt mechanization, and this not only has infused efficiency but employment also in rural areas to fight unemployment.

Chinese agricultural know-how has also tremendously impacted different aspects of farming in Nigeria, from crop rotation to pest management. The efforts are more than just standalone gestures; they feed into the larger goal of modernizing the sector, which is vital to the goal of growing enough food for Nigeria's rising population. However, despite all this progress, the new technologies have taken a long time to implement in many locations where underdeveloped infrastructure and local farmers unwilling to adapt to new techniques and methodologies have been a significant hindrance. They can also serve their role by injecting more agricultural financing schemes faster, which stimulates mechanization in farming. Especially if it can supplement loans with subsidies of modern equipment to smallholder farmers so that they can participate in technology, thus productivity increases across the sector products. Partnerships with Chinese financial institutions could pave the way for scaling these initiatives.

## Technology Transfer and Issues

At the core of the Sino-Nigerian partnership is technology transfer, one of the major channels of knowledge and skill from China to Nigeria. This process has been critical in both renewable energy as well as agriculture. That said, there have been some growing pains in the translation of the technology onto farms. For one there is the matter of capacity at the local level. From the side of Nigeria, as has been observed, especially with recent Chinese investments; it should be noted that whilst China offers the latest of technologies to Nigeria, it is often unable to provide the necessary training for an effective and sustainable workforce to manage these technologies. IP Issues/Patents and failure of Nigeria to evolve its own innovation system There are also experts who claim that the technology transfer aspect is crucial but cannot stand on its own; one needs innovation capability building locally to continue the sustainability in the long run (Olujobi et al., 2023). Moreover, the **inclusivity** of the technology transfer process has been a point of contention. Critics argue that the benefits of these projects have not always been equitably distributed, particularly among marginalized groups in rural areas. There is also the risk that Nigeria may become overly reliant on China for both technology and financial resources, potentially undermining its ability to independently drive its development agenda (Johnson, 2024). Also, building a culture of innovation in Nigeria now reflected in our academic and research institutions is vital to the sustainability of technology transfer impact. We need to incentivize universities and technical colleges to develop locally adapted solutions that build on imported technologies. This not only increases the relevance of technology investments but also repositions Nigeria on the global innovation landscape.

### 1) Aligning with the United Nations SDGs

Both renewable energy and agricultural modernization projects align with several of the United Nations' SDGs. These include:

- **SDG 7 (Affordable and Clean Energy)**: Through Chinese investments in renewable energy, Nigeria has made significant progress in expanding electricity access and reducing its reliance on fossil fuels.
- **SDG 2 (Zero Hunger)**: Agricultural initiatives have led to increased productivity, contributing to food security and poverty reduction.
- **SDG 8 (Decent Work and Economic Growth)**: By modernizing agriculture and providing job opportunities in rural areas, Sino-Nigerian projects have contributed to economic growth and employment.
- **SDG 9 (Industry, Innovation, and Infrastructure)** through the application of digital technologies in renewable energy and agriculture initiatives. For example, investments in smart grids, AI-driven energy

management systems and e-commerce platforms for agricultural markets reflect transformative steps in the direction of that outcome.

## CONCLUSION

The partnership between Nigeria and China in renewable energy and agricultural modernization represents a promising model of South-South cooperation, driven by mutual benefits and shared development goals. While significant progress has been made, challenges related to technology transfer, infrastructure, and long-term sustainability remain. By addressing these challenges, Nigeria can maximize the potential of this collaboration to achieve its development goals, particularly in energy access and food security. Further research and continued policy dialogue are essential to refining these partnerships and ensuring their lasting impact on both countries' development trajectories. In order to maximize the synergies of Sino-Nigerian partnerships, the two powers must build strong mechanisms for monitoring and evaluation. These frameworks should measure performance against key performance indicators that need to be aligned with national development goals and global sustainability benchmarks. This makes such an approach as ensuring accountability and facilitating adaptive management of ongoing projects.

## RECOMMENDATIONS

Again, the challenges to be confronted and the opportunities to be seized require strategic interventions in Sino-Nigerian partnership for the benefits of renewable energy and agricultural modernization and sustainable development. These recommendations involve strengthening local capacity, making inclusivity a priority, encouraging coordinated policies, and supporting community engagement. Focusing on a new way of developing environmentally sustainable technologies, improving public-private partnerships and strengthening South-South cooperation mechanisms would prepare Nigeria to transit towards a resilient framework that not only serves development imperatives but in the end, lays ground for long-term solutions.

### i) **Strengthening Local Capacity for Technology Maintenance**

The need for customized training programs in institutions of higher learning as well as vocational centers cannot be overemphasized to ensure local professionals receive the skills necessary to operate, troubleshoot, and maintain renewable energy systems and agricultural equipment as well as to maintain and operate technology that is essential for the long-term sustainability of such projects. This reduces the need to rely on external expertise and creates a skilled workforce that will help in achieving the development goals of Nigeria. Additionally, China-Nigeria joint research centres would enable continuous knowledge spillover and technology adaptation to Nigeria-specific contexts. They can become centers of innovation around local solutions to Nigeria's energy and agricultural challenges. For example, studies on renewable energy systems

optimized for Nigeria climate or on agricultural implements suitable for smallholder farmers can have higher relevance and higher impact.

A policy-promoting private sector participation in training and capacity-building activities is involved in strengthening of local capacity. Encouraging on the job training and apprenticeships will help to further sharpen the skills of the local labor force. An emphasis on inclusive capacity-building programs, especially for women and youth, can enhance the social and economic impacts, making them more relevant and far-reaching. Only then can Nigeria strengthen the foundations for self-sufficiency and sustainable development whilst also ensuring that such collaborations between Nigeria and China are mutually beneficial over the long term.

### **ii). Enhancing Inclusivity in Technology Transfer**

Ensuring that the benefits of technology transfer are equitably distributed among all segments of the population, particularly marginalized and rural communities, is crucial. Policymakers should prioritize inclusivity in the deployment of technologies by ensuring that local farmers, women, and young people have access to the necessary resources and training. Community-based initiatives, such as farmer cooperatives and local energy co-operatives, could be effective ways of ensuring equitable participation in these transformative projects.

### **ii) Fostering Greater Policy Coordination and Alignment**

Particularly, although much has been accomplished in terms of Sino-Nigerian partnerships, more collaborative efforts are required if we want to ensure that these efforts gain scalability and sustainability. To ease implementation and funding for projects, a common policy framework harmonizing the objectives of both governments would be necessary. That should include joint committees or task forces that ensure regular communication and track progress, moving projects and capabilities back on track if new challenges arise. Transparency mechanisms for policy alignment should also engage stakeholders from government, the private sector, civil society. This approach supports policies to have a multifaceted focus there by catering for a variety of perspectives, allowing for a sense of shared responsibility. Examples include collaborative regulations that could provide uniformity for key technology transfer contracts and investment incentives, thereby lowering the entry barriers for the private investor base. Better coordination would help in scaling up successful pilots to achieve country-wide impact in Nigeria.

In addition, bilateral arrangements could also promote accountability by putting in place performance benchmarks and periodic reviews in order to make sure that projects achieve expected development targets. With the right focus on coordination, though, the Nigerian and Chinese governments can fortify their

partnership with more synergy, making it stronger, scalable and sustainable to tackling Nigeria-centred development challenges.

iii) **Increasing Public Awareness and Community Engagement**

Normally, Sustainability of renewable energy and agricultural modernization projects needs to be fully publicised and the community fully aware and involvement. You can also educate communities on the benefits of these technologies, such as the savings, conservation of natural habitats, and increased productivity, to create public acceptance. Local workshops and town hall meetings, along with multimedia outreach, can clarify new technologies and counter perceived threats. Equally important is developing a participatory approach. Projects Should Involve Local Farmers And Energy Users Through Their Planning, Design And Implementation Phases Not only do we make sure that interventions are tailored to the specific needs of the local community but we also cultivate a sense of ownership and accountability. Where, for example when bringing in community representatives as decision makers to anyone involved in decision making who can identify solutions to challenges, such as maintenance and operational challenges. Moreover, focused sensitization could highlight the success of solar power installations and mechanized agriculture in comparable scenarios, promoting confidence and uptake. Targeted training in local communities can establish the technical ability to operate and repair renewable energy and agricultural equipment, promoting independence. Such program should be inclusive attaining higher participation of women and youth in other sub-sector shoots and higher overall impact development as far ethical development is concern.

Again, Renewable energy and agricultural projects that incorporate community perspectives and enhance public understanding can be respectively more effective, sustainable, and socially desirable, creating the basis for transformative change in rural and urban areas alike.

iv) **Investing in Sustainable and Environmentally Friendly Technologies**

The first principle here is that renewable energy projects such as wind and solar farms must be environmentally sustainable, otherwise they cannot provide for sustainable development over the long term. But Nigeria and China must also enforce the tough environmental standards — tougher than international norms — that these projects need to meet. This involves embodied environmental and social impact assessments (ESIAs) across its lifecycle from conception to decommissioning. These evaluations should consider the impact on biodiversity, water resources and local communities, and mitigation should be implemented to avoid negative effects if they are predicted. For this to be efficient it is extremely encouraged to use whatever the highest technology available and also try to use as least resources as possible. For example the coupling with high class energy storage devices e.g. hydrogen cells or other cell technologies of the future to ensure electricity network

stability and adapt to the temporal characteristics of renewable energies. In addition, novel smart grid technology like automated monitoring and adaptative energy distribution systems allow and enhance energy efficiency, nullify transmission losses and more to that end contribute towards green economy. Beyond the infrastructure, there must be capacity building and transfer of knowledge to local actors. Consequently, this guarantees the technical expertise to operate and maintain these systems is drawn upon locally and hence, reduces expatriate dominance. In like manner, Workshops and programs not specific to just Nigeria but as well those of China developed in conjunction with collaborative technology development programs between institutions from both nations could assist in this regard – centering the technology locally, which will optimally ensure adaptive capacity along with efficacy. It would also be a great idea to embrace the circular economy approaches towards project design and implementation, to reduce waste and promote recycling. Regarding solar panels, wind turbines and similar instruments, these should be recyclables, or even better — reusable, with specific regulations on what to do at the end of their life span so that they don't poison the planet.

Ultimately, policy-level frameworks that encourage green technology innovation via tax incentives for green initiatives or subsidies for these same sustainable endeavours can drive ever more private sector funding. Doing so would help Nigeria and China both mitigate the detrimental environmental externalities of renewable energy projects and emerge as global models of low-carbon economic development for other developing countries.

v) **. Strengthening South-South Cooperation Mechanisms**

The collaboration between Nigeria and China serves as a powerful model for South-South cooperation which may galvanize many countries in the Global South. This partnership shows how countries with similar development challenges can use their respective advantages to tackle pressing issues like access to energy, food security and sustainable industrialisation. To this end, the two countries should actively help strengthen the existing platforms at the regional level for cooperation on the multilateral frameworks that will facilitate the sharing of knowledge, policy harmonization, and making concerted efforts to invest resources into implementing large-scale projects. For example, Nigeria and China can lead collaborative research in renewable energy technologies suitable to Africa's specific geographical and economic conditions. Furthermore, it could also be a tool for capacity-building in neighboring countries, creating a culture of innovation and self-advancement across the region. Nigeria and China can take the lead in promoting a global South development paradigm shift by embedding South-South cooperation beyond the boundaries of traditional development actors. This would not only increase the effectiveness of ongoing projects but also inspire other developing nations to follow a collaborative approach towards sustainable development.



vii). **Encouraging Public-Private Partnerships (PPP)**

Nigeria needs to leverage/increase its PPP in Renewable Energy and Agriculture to raise additional investments while projects implementations attract the private sector in efficiency. Collaborative deals between Nigerian firms and Chinese companies should also build local capacity and also create jobs. Combining government oversight with innovation in the private sector, PPPs can also help fill critical gaps in funding and expertise. For example, the government could work with private firms to create off-grid renewable energy projects for areas in the hinterlands, thereby increasing access to electricity. Likewise, in the agriculture sector, PPPs can facilitate the deployment of cutting-edge farming techniques, the establishment of agro-industrial hubs, and drive value chain development. In order to effectively attract credible investors and balance the sharing of risks and rewards among stakeholders, clear and established guidelines, as well as organizational frameworks and incentives, must be put in place. To ensure more sustainable and impactful development, PPPs could include performance-based contracts and regular monitoring mechanisms in both sectors.

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## **BLENDED LEARNING: A NEW CHALLENGE FOR PAKİSTANİ UNİVERSİTY STUDENTS'**

**Zohaib Hassan Sain**

[zohaib3746@gmail.com](mailto:zohaib3746@gmail.com)

**Superior University, Faculty of Business & Management Sciences, Lahore, Pakistan**

### **ABSTRACT**

The aim of this study was to examine the standpoints of BS 4 years program (BSCS) students in Pakistani universities regarding the issues and challenges they face. The study utilized a descriptive survey method with a quantitative approach to quantify and measure students' perceptions and issues related to blended learning in education. The study collected data from 219 students out of 482 enrolled in the BS 4 years program (BSCS) at three public universities in Pakistan in the 2022 academic year. A questionnaire with a three-point Likert scale was used to gather data, which was then analyzed using frequencies, percentages, and diagrams. The findings showed that most students had a positive view of blended learning, but they also encountered various issues, such as lack of time, insufficient skills and support for proper use, lack of training, and unavailability of Learning Management Software (LMS) for technological learning tools. The study suggests the need for the development of institutional policies for the effective use of blended learning in universities and the implementation of training and skill development programs for teachers to integrate technology in their teaching.

Keywords : Blended Learning, Challenges, Standpoints, Teacher Education.



## CONTAMINATION LEVEL AND ECOLOGICAL RISK ASSESSMENT OF POTENTIALLY TOXIC METALS IN WATER AND SEDIMENT OF MIRUSHE WATERFALL IN MUNICIPALITY OF MALI SHEVA-KOSOVO

**Jeton Halili<sup>1</sup>**

<sup>1</sup>Department of Chemistry, Faculty of Natural and Mathematical Science, University of Prishtina “Hasan Prishtina”, 31, "George Bush" str., Prishtina 10000, Kosovo

**Fatjona Isufaj<sup>2</sup>**

<sup>2</sup>Alma Matter Europaea Campus College, “REZONANCA”, Glloku of Shelgjet “Veternik” 10000-Prishtinë, Kosovo

**Skender Demaku<sup>1\*</sup>**

<sup>1</sup>Department of Chemistry, Faculty of Natural and Mathematical Science, University of Prishtina “Hasan Prishtina”, 31, "George Bush" str., Prishtina 10000, Kosovo

**Corresponding author's e-mail:** skender.demaku@uni-pr.edu

**Shkurtesa Krasniqi**

<sup>1</sup>Department of Chemistry, Faculty of Natural and Mathematical Science, University of Prishtina “Hasan Prishtina”, 31, "George Bush" str., Prishtina 10000, Kosovo

**Corresponding author's e-mail:** skender.demaku@uni-pr.edu

**Arbnora Aliu**

<sup>1</sup>Department of Biology, Faculty of Natural and Mathematical Science, University of Prishtina “Hasan Prishtina”, 31, "George Bush" str., Prishtina 10000, Kosovo

**Donika Sylejmani**

<sup>1</sup>Department of Biology, Faculty of Natural and Mathematical Science, University of Prishtina “Hasan Prishtina”, 31, "George Bush" str., Prishtina 10000, Kosovo

**ABSTRACT:** Increasing anthropogenic activities due to rising global human population and urbanization, have resulted into contamination of many Waterfalls, urban lakes and rivers, with potentially toxic metals (PTMs).

This study investigates the contamination levels and ecological risk assessment of selected PTMs (As, Ni, Zn, Fe, Al, Cu, Cr, Pb, Mn and Cd) in water and sediment of Mirushe waterfall in Mali sheva city in Kosovo, in a period of June/July, 2024 and using Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES) and compared with WHO and USEPA standards. Results show that the highest concentrations, among the analyzed PTMs, were measured for Cu: 2.84 -2.87 mg\*dm<sup>-3</sup>, Mn; 0.67- 0.79 mg\*dm<sup>-3</sup>, Fe: 0.33-0.35 mg\*dm<sup>-3</sup>, Cr; 0.068-0.078 mg\*dm<sup>-3</sup> and Pb; 0.027-0.031 mg\*dm<sup>-3</sup>, while the concentration ranges for the another elements, were; Zn; 0.95-2.36 mg\*dm<sup>-3</sup>, Al; 0.10- 0.11 mg\*dm<sup>-3</sup>, Ni; 0.02 – 0.022 mg\* dm<sup>-3</sup>, Cd; 0.001 – 0.002 mg\*dm<sup>-3</sup> and 0.006- 0.007 mg\*dm<sup>-3</sup> As, respectively, for water of Mirushe waterfall in the Mali sheva city in Kosovo. Thus, Cu, Mn, Fe, Cr and Pb, concentrations exceeded the toxicity reference value (WHO- standard) and another water quality guidelines, showing that the water may be contaminated with relevant elements.

Contamination factor and geo-accumulation index show that all studied PTMs had low contamination in the sediment (USEPA standard) of Mirushe waterfall in Mali sheva city, and enrichment was indicating anthropogenic influences.

Periodic monitoring of Mirushe waterfall (water and sediment), for PTMs (particularly cumulative elements; Pb and Cd) is, therefore, advocated to protect the aquatic organisms and the entire biotic habitat of the ecosystem.

**Introduction and Purpose:** Due to rapid growth in human population worldwide coupled with increasing domestic activities, industrial and agricultural production, large amounts of hazardous chemicals including potentially toxic metals (PTMs) are being discharged into the aquatic ecosystems (Islam et al., 2015).

Sediment is regarded as a sink for PTMs in waterfall, rivers and lakes (Oyeyiola et al., 2014). Contamination of water and sediment material by PTMs is an environmental concern in aquatic ecosystems (Ndhlovu et al., 2023). PTMs are considered as serious contaminants in marine sediments as a result of their stability against degradation, potential toxicity and bioaccumulation (Pejman et al., 2015); and their concentrations in sediments could serve as an indicator of contamination status and conditions of marine ecosystems (Pejman et al., 2015).

Although certain heavy metals in low amounts are needed for the survival of aquatic organisms, their elevated concentrations are toxic and could affect the aquatic organisms and humans (Botle et al., 2024).

Anthropogenic factors have been identified as primary drivers for water and sediment pollution in waterfall, rivers and lakes (Chang et al., 2024).

**Materials and Methods:** Description of sampling locations: Mirusha Waterfall is located in the central part of Kosovo, extending into the territory of the municipalities of Klina, Mali sheva and Rahovec, where the area of the natural monument is 598.4 ha. Most of the natural monument is built from the limestone rock source which belongs to the formations with fissure porosity, where the rocks have small average groundwater flows, (KSA, 2015-2024).

The hydrographic network is not so developed, the main river is the Mirusha River, also part of the network are several streams with permanent and temporary flows, which are fed with water mainly from atmospheric precipitation (rain, snow, etc.), most of them do not have water all year round, but usually have water during Spring and Autumn and partially during Winter, (KSA, 2015-2024).

In this area, there are several natural water sources that originate at the contact of water-bearing and non-water-bearing rocks (Palaeozoic limestones and shales). Predominant human activities in the area include

fishing, car washing, clothes washing, automobile repairing, farming, geoprocessing and road traffic, flowing through densely populated and numerous natural attractions, (KSA, 2015-2024).

**Results:** PTMs composition in water and sediment: The measured concentrations of heavy metals in the water of Mirushe waterfall, are presented in Table 1. The ranges of heavy metals concentrations in the water of Mirushe waterfall (from minimum to maximum; M1 to M6), were; Cu: 2.84 -2.87 mg\*dm<sup>-3</sup>, Mn; 0.67- 0.79 mg\*dm<sup>-3</sup>, Fe: 0.33-0.35 mg\*dm<sup>-3</sup>, Cr; 0.068-0.078 mg\*dm<sup>-3</sup> and Pb; 0.027-0.031 mg\*dm<sup>-3</sup>, while the concentration ranges for the another elements, were; Zn; 0.95-2.36 mg\*dm<sup>-3</sup>, Al; 0.10- 0.11 mg\*dm<sup>-3</sup>, Ni; 0.02 – 0.022 mg\*dm<sup>-3</sup>, Cd; 0.001 – 0.002 mg\*dm<sup>-3</sup> and 0.006- 0.007 mg\*dm<sup>-3</sup> As, respectively.

The highest concentrations were measured for Cu, Mn, Fe, Cr and Pb, etc, among the analysed heavy metals in the water collected from the Mirushe waterfall body, while elements such as Ni, Zn, Al, Ni, Cd and As had generally lower values than the above-mentioned elements, but they also presented low values compared to international standards.

**Discussion and Conclusion:** Among the PTMs investigated, only Cu, Fe and Mn concentrations exceeded the toxicity reference values and sediment quality guidelines, indicating that sediment of Mirushe waterfall may be contaminated easily with Cu, Fe and Mn. Higher enrichment of Cu, Fe and Mn in the sediment, indicates anthropogenic influences.

All studied heavy metals had low contamination in the water of Mirushe waterfall, except Cu and Mn which had a moderate pollution in the water of Mirushe waterfall and Fe and Cr, that had light pollution in the water body the Mirusha waterfall.

Therefore, this study suggests the need for regular monitoring of Mirushe waterfall for PTMs (especially heavy metals) to protect the aquatic and benthic organisms living in or near the water body.

**Key Words:** Mirushe waterfall, potentially toxic metals, ecological risk assessment, water, sediment, ICP-OES Methode.



## EXPLORING THE ECONOMIC PERFORMANCE OF WOMEN SMALLHOLDER BAMBARA NUT FARMERS IN NIGERIA

Ridwan Mukaila

Department of Agricultural Economics, University of Nigeria, Nsukka, Enugu State, Nigeria

Corresponding author email: [ridwan.mukaila@unn.edu.ng](mailto:ridwan.mukaila@unn.edu.ng)

### Abstract

Women are important stakeholders in food production. However, they are limited to small-scale levels in Nigeria, making them vulnerable economically. Thus, women need to venture into a profitable agribusiness enterprise. Identifying the drivers of economic performance will be a pathway for better resource allocation. Hence, this study explores the economic performance of women Bambara nut farmers and their drivers using profitability analyses and beta regression. The results revealed that operational costs accounted for the largest share (82.13%) of the Bambara nut production cost, while fixed costs accounted for only 17.87%. In addition, the major costs incurred in Bambara nut farming were the cost of labour, agrochemicals, and seeds. Furthermore, women Bambara nut farmers made a relatively high gross profit (USD 188.45), net profit (USD 141.41), return on capital investment (0.54), a benefit-cost ratio (1.54), contribution margin ratio (0.47), and profit ratio (0.35), as well as a low operating ratio (0.53) per hectare. Thus, Bambara nut production was profitable, financially healthy, and gave a high return on investment, making the business economically viable. The factors that contributed positively to the profitability of the enterprise were formal education, annual income, credit, extension services, fertilizer usage, cooperative society membership, farm size, and household size. In contrast, the cost of inputs inhibits the profitability of the venture. This study advocates for more women's participation in Bambara nut production due to its high profitability and potential to enhance their economic status.

**Keywords:** Bambara nut, driving factors, economic performance, profitability, women in agriculture

## EXAMINATION OF THE CHEMICAL COMPOSITION AND ELEMENTS IN COW'S MILK

**Juliana Tomovska**

University "St. Kliment Ohridski" – Bitola, Faculty of Biotechnical Sciences-Bitola  
Partizanska bb, 7000 Bitola, North Macedonia.

**ORCID:** 0000-0001-8956-1362

**e-mail:** [dzulitomovska@yahoo.com](mailto:dzulitomovska@yahoo.com)

[dzulijana.tomovska@uklo.edu.mk](mailto:dzulijana.tomovska@uklo.edu.mk)

### Abstract

Cow's milk as a food product characterized by a complex chemical composition. The human body is easily used mineral substances of milk, because they are easily digestible and usable. Milk from three farms (A, B, C) examined which obtained from the same breed of Holstein cattle and fed differently but with the same animal feed: alfalfa hay, concentrates and wheat straw. Total daily meal of the cattle was different (20kg farm A, 28kg Farm B and 31kg Farm C per day). The Gerber method used to determine the percentage of fat in milk, Kjeldahl method for determination of total nitrogen and calculation of total proteins. Determination of milk sugar-lactose was with iodometric method, dry matter by direct method, based on drying the milk at a temperature of 105<sup>0</sup>C to a constant weight. The obtained result represents a dry substance and is expressed in percent (%). Determination of the specific gravity and determination of the density of milk with Lactoscan. Analyzed 21 chemical elements using ICP - AES (Varian, 715-ES) and using CETAC ultrasonic nebulizer (ICP/U-5000AT+) for better sensitivity. The results of the analysis of the chemical composition of the milk from the three farms are similar. Dry matter (8.22 %), fat (3.65 %) and lactose (4.49 %) dominate milk from farm B, while milk from farm C is dominated protein (3.10 %) density (28.56 %). From analysis elements concluded that the highest value was potassium with 1174 mg/L, than calcium 1122 mg/L and phosphorus 786 mg/L in the milk from farm A. The composition of the food is variable depends of the type and composition of the animal feed, and from the amount of the daily meal. In general, all types of milk from the three farms have enough proteins and dry matter, which is a signal for the quality of the milk.

**Keywords:** cow's milk, chemical composition, mineral elements, animal feed.

## **EROSION MODELING AND ASSESSMENT USING GOOGLE EARTH ENGINE AND THE RUSLE EQUATION: APPLICATION TO THE MOULAY YOUSSEF DAM AREA, MOROCCO**

**Boulanouar Wardia; El Mjiri Ikram; Rahimi Abdelmejjid and Bounif Mohamed.**

**Laboratory of Geodynamics and Geomatics; Department of Geology, Faculty of Science, El Jadida,  
Morocco.**

Soil erosion due to rainwater and runoff is a natural phenomenon responsible for soil degradation, and also a risk threatening natural resources, particularly in the vicinity of dams. In recent decades, with the advent of remote sensing and geographic information systems (GIS), several studies have enabled water erosion to be mapped and quantified. Indeed, the ability of geographic information systems to analyze data provided by multispectral satellite imagery at very high spatial resolution has made it possible to obtain a range of information that is highly useful for understanding soil loss processes and their environmental, agricultural and social impact. In this context, the Tassaout watershed (upstream of the Moulay Youssef dam) is facing severe soil degradation. The aim of this study is to highlight the areas most at risk of water erosion and to estimate the average annual soil erosion, based on factors linked to climate, soil, vegetation and topography. The methodology adopted to map areas at risk of erosion involves firstly drawing up thematic maps such as the land use map, the slope map, the hydrographic network map and the material friability map. These maps were created from a Sentinel-2 scene. The quantification of soil losses in this region was then calculated by applying the Revised Universal Soil Loss Equation (RUSLE). The principle consists in integrating the various factors involved in water erosion processes and taken into account in the empirical RUSLE model into a geographic information system. The results obtained show that the Tassaout watershed is subject to a highly aggressive climate and is highly vulnerable to water erosion, especially in bare soils. This study enabled us to carry out both a qualitative and quantitative spatial analysis of the areas most exposed to the risk of water erosion. The map generated will be of great interest to local managers in guiding erosion control actions, as it will enable them to target the area's most vulnerable to water erosion phenomena. These results confirm that particular attention should be paid to areas with a higher potential for soil erosion, since the negative consequences of water erosion include a reduction in water storage capacity due to the silting-up of dams, as in the case of the Moulay Youssef dam in our study area.

**Key words:** Water erosion, remote sensing, GIS, RUSLE equation, Tassaout watershed.

## QUATERNIONIC SVD DECOMPOSITION FOR IMAGE COMPRESSION AND COMPLETION

**Karim Kreit; Abdeslem Hafid Bentbib; Oumaima Benchettou,**

**ORCID: 0000-0002-8046-1610**

**E-Mail : [k.kreit@uca.ac.ma](mailto:k.kreit@uca.ac.ma),**

**Cadi Ayyad university, Marrakech**

### **Abstract :**

In this paper, we introduce an iterative technique for calculating the SVD decomposition of a quaternionic matrix, which is projected into the  $2n$ -by- $2m$  complex space. The main focus of the work is on a block-power iteration combined with QR decomposition. This method is applied to the compression and completion of color images. We also present numerical experiments on images, showcasing the efficiency and effectiveness of the proposed method.

**Keywords:** Power iteration, Quaternion algebra, QR factorization, SVD decomposition, pseudo inverse, image completion.

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## PARAMETRIC STUDY OF MODAL ANALYSIS OF THE INTERACTION OF THE BENI BAHDEL DAM SYSTEM WITH THE WATER RESERVOIR

**Mohammed Habib DAOUDI**

**ORCID: <https://orcid.org/0000-0003-1464-9831>**

**E-Posta:45100**

Belhadj Bouchaib University, Faculty of Science and Technology, Intelligent Structures Laboratory, Algeria

### **Özet**

The objective of this work is to analyze the modal behavior of the Beni Bahdel multi arch dams located in Tlemcen, taking into consideration the effect of foundation-structure interaction. The finite element code Ansys was chosen for the dynamic modeling of the dam which is the subject of this study. To analyze the importance of the foundation modeling in the foundation-structure interaction, two finite element models of the BENI BAHDEL dam are used to analyze the foundation-structure interaction phenomenon, the dam rigid and the dam with foundation. For the dam and its foundation, the model element of the SOLID185 element available in the Ansys code library was used. The results obtained in the case of modal analysis allowed us to understand the effect of foundation on structure in dynamic behavior..

**Anahtar Kelimeler: Foundation-dam interaction, ANSYS, Modal behaviour,**

## BENI BAHDEL BARAJ SİSTEMİNİN SU REZERVUARI VE KAYA TEMELİYLE ETKİLEŞİMİNİN SÖNÜMLENMEMİŞ MODAL ANALİZİNİN KARŞILAŞTIRMALI ÇALIŞMASI

Daoudi, Mohammed Habib

ORCID: <https://orcid.org/0000-0003-1464-9831>

45100

Bilim ve Teknoloji Fakültesi, Akıllı yapı laboratuvarı, Belhadj Bouchaib Üniversitesi, Cezayir

### Özet

[Bu çalışmanın amacı, Tlemcen'de bulunan Beni Bahdel çok kemerli barajının modsal davranışını, sıvı-yapı etkileşimi ve zemin-temel etkileşimi etkilerini dikkate alarak analiz etmektir. Barajın dinamik modellenmesi için "Ansys" sonlu elemanlar yazılımı seçilmiştir ve bu çalışma, barajın bu açıdan incelenmesini konu edinmektedir. Sıvı modellenmesinin sıvı-yapı etkileşimindeki önemini değerlendirmek ve zemin-temel etkileşimi ile karşılaştırmak için iki yaklaşım kullanılmıştır: baraj sisteminin boş olduğu durum ve sıvı ile dolu olduğu durum. Sıvı için, Ansys kod kütüphanesinde mevcut olan SURF elemanı kullanılarak Westergaard yaklaşımına dayalı ek kütle modeli uygulanmıştır. Modsal analizden elde edilen sonuçlar, sıvının yapının dinamik davranışı üzerindeki etkisini anlamamızı sağlamıştır.].

**Anahtar Kelimeler:** Çok kemerli baraj, modal analiz, akışkan-yapı etkileşimi.

## COMPARATIVE STUDY OF UNDAMPED MODAL ANALYSIS OF INTERACTION WITH WATER RESERVOIR AND ROCK FOUNDATION OF BENI BAHDEL DAM SYSTEM

### Abstract

[The objective of this work is to analyze the modal behavior of the Beni Bahdel multi-arch dam located in Tlemcen, considering the effects of fluid-structure interaction and rock-foundation interaction. The finite element software "Ansys" was chosen for the dynamic modeling of the dam, which constitutes the focus of this study. To assess the significance of fluid modeling in the fluid-structure interaction and compare it with the impact of rock-foundation interaction, two approaches were employed: analyzing the dam system when empty and when fully filled with fluid. The added mass model (based on the Westergaard approach) was utilized for the fluid, implemented using the SURF element available in the Ansys code library. The results obtained from the modal analysis provided valuable insights into the influence of fluid on the dynamic behavior of the structure.].

**Keywords:** Multi-arch dam, modal analysis, fluid-structure interaction.

### Introduction

After rock-structure interaction, the fluid-structure coupling is most likely the most frequently encountered interaction. Examining the seismic response of structures such as dams, storage tanks, and offshore structures necessitates considering fluid-structure interaction effects and, in some cases, the compressibility of water. These effects can cause significant changes in the structure's modal characteristics, such as vibration frequencies and natural modes of vibration (Tahar Berrabah Amina, Mohamed, André, & Abdelmalek, 2015). Because the coupled system involves elements with different physical properties and necessitates a complex approach, an analytical treatment is frequently limited depending on the problem requirements. As a result of its ability to discretize irregular geometries and solve cases involving the structure, foundation, and reservoir fluid interacting with each other, the finite element method (FEM) fits well in solving these problems.

WESTERGAARD (Westergaard, 1933) published the first solution to the problem of hydrodynamic pressures on dams with a vertical upstream face exposed to horizontal and harmonic motion in 1933. Since then, much research has been published on the subject, with various aspects of the problem being addressed. taken into account. two anther approaches can be mentioned: Lagrange's approach and Euler's approach.

WESTERGAARD defines the effect of the fluid on the structure as the addition of a matrix of added masses to the structure's mass matrix. A parabola section was proposed to represent the volume of water.

The following assumptions underpin this method:

- the dam is rigid;



- the upstream face is a vertical plane;
- the liquid is incompressible;
- the reservoir extends to infinity in the upstream direction.

The effect of compressibility produces a damping effect, which corresponds to seismic wave absorption at infinity. Except in the case of large dams, where the results neglecting this effect are poor, this effect is always very weak in comparison to the other damping effects encountered in the structure. Except in the case of a large dam, where the results are meaningless if this effect is ignored, this effect is always very weak in comparison to other damping effects encountered in the structure.

Studies conducted by Chopra at the University of California, Berkeley, appear to indicate that the presence of a layer of silt results in a significant reduction of the phenomenon of compressibility and reflection, in other words the silt is sometimes beneficial (TAHAR BERRABAH Amina, 2013).

In contrast to the effects of inertia and compressibility (when they are significant), the viscosity effect is frequently weak and has no effect on the resonance frequencies and modal deformations of the structures (Boumaïza, 2010)

#### **Dam–foundation rock finite element models**

The BENI-BAHDEL dam is located 25 km southwest of Tlemcen, Algeria, it is a dam with multiple cylindrical arches and buttresses, built-in 1934 on the Oued Tafna for a retention volume of 63 million m<sup>3</sup>, and it was impounded in 1944. (Figure 1). The dam geometry is defined in Table 1.



Figure 1 : BENI-BAHDEL multi-arch dam.

Table 1: BENI-BAHDEL multi-arch concrete dam geometry (A. Stucky, 1937).

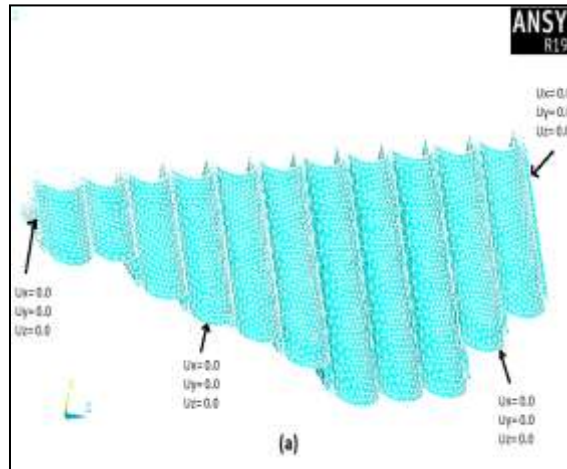
Element	The dimensions	Measures
Buttresses	The height above the ground of the foundation	57 m
	Spacing	20 m from axis to axis
	The form	Substantially triangular
	The inclination of the upstream-facing	1: 0.95
	The inclination of the downstream-facing	0.30
	The thickness at the top	3 m
	The thickness at the lower end	4.80 m
Arches	The length of the ridge	220 m
	Number of arches	11
	The form	Circular cylinder
	Internal diameter	17.20 m
	Inclination	1: 0.95
	The thickness at the top	0.70 m
	The thickness at the lower end	1.30 m

The dam-foundation system is analyzed using three 3D finite element models. The first model represents only the dam with a fixed support at its base, excluding the foundation (Figure 2). The second model incorporates both the dam and the adjacent foundation but neglects the foundation's mass, with the foundation base fixed (Figure 3). Finally, the third model, similar to the second, includes the foundation's mass in the analysis (Figure 3). These finite element models were created using the commercial finite element software ANSYS, with a structured mesh. The mesh refinement was determined through a convergence analysis (mesh sensitivity study).

The first model consists of 13,926 nodes and 41,598 quadratic solid elements (SOLID185) (see Figure 2). The second model, representing the dam-rock foundation system, assumes that the rock foundation is fully

connected to the dam, requiring no contact elements. This 3D finite element model comprises 97,519 quadratic solid elements (SOLID185) and 27,424 nodes (see Figure 3).

Due to the U-shaped valley geometry, the height of the dam arches and buttresses varies between 18 m and 57 m. For the rock foundation, an extension equal to three times the height of the dam (171 m) is considered in all three directions. These dimensions are sufficiently large to ensure that the imposed boundary



conditions have no impact on the dam's modal responses (Sani and Lotfi, 2010).

Figure 2: Finite element model of BENI-BAHDEL multi arch dam.

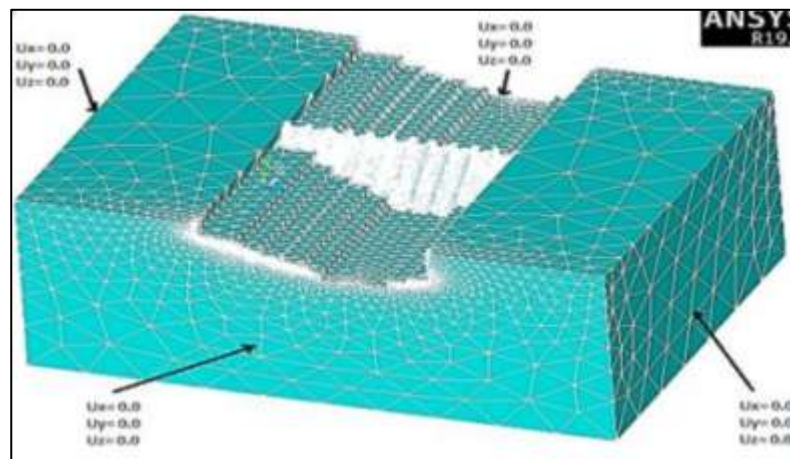


Figure 3: 3D Finite Element Model of the Beni Bahdel Multi-Arch Dam with Rock Foundation

Two approaches were used to analyze the effects of fluid-structure interaction. In the first approach, the system was considered empty, with no fluid present. In the second approach, the system was analyzed when fully filled with fluid. These two scenarios allowed for a comparative evaluation of the fluid's influence on the dynamic behavior of the structure, providing a deeper understanding of the interaction mechanisms at play. A 3D shape with 8-Node SOLID 185 element (homogenous structural solid), shown in Figure 4 available in

ANSYS 17.0, is a suitable element used for modeling the dam structure and its rock foundation. Such an element has three degrees of freedom at each node: translations in the directions of the nodal x, y, and z. The element has plasticity, hyperelasticity, stress stiffening, creep, large deflection, and large strain capabilities. It also has mixed formulation capability for simulating deformations of nearly incompressible elastoplastic materials, and fully incompressible hyperelastic materials (ANSYS, n.d.).

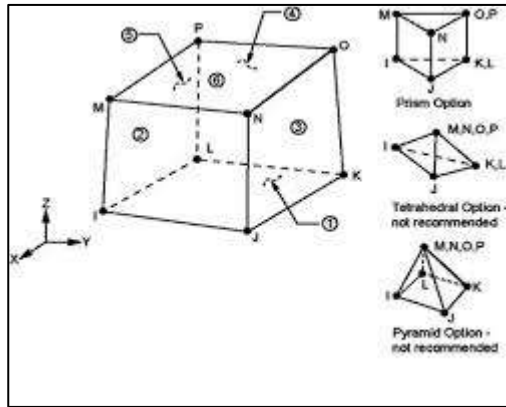


Figure 4. SOLID 185 element geometry (ANSYS, n.d.).

The second application involves simulating the fluid-structure interaction; for this purpose, the dam is assumed to be full.

The fluid was modeled using the added mass method. Model the fluid using the ANSYS code and the SURF154 element from the ANSYS library shown in figure 5. This approach can be represented using the ANSYS library. It entails distributing the fluid's mass across the contact surface between the reservoir and the dam.

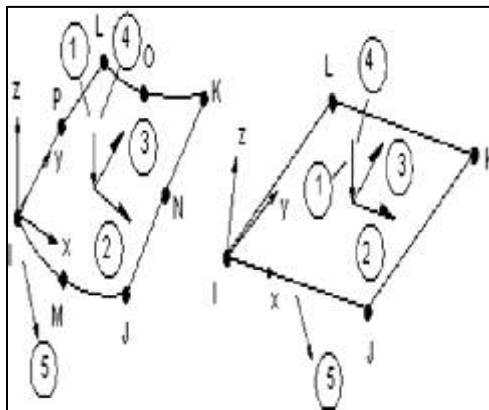


Figure 5. Surf 154 element geometry (ANSYS, n.d.).

Equation 1 gives the thickness of the surf 154 elements:

$$\text{Thickness of the surf 154 element} = \frac{\text{water volume of the dam (m}^3\text{)}}{\text{fluid dam contact surface (m}^2\text{)}} \times \text{water density (kg/m}^3\text{)} \quad (1)$$

The material properties for both the concrete multi-arch dam and fluid are given in Table 2.

Table 2: Material properties of the multi-arch dam and fluid.

Material	Young's modulus (N / m <sup>2</sup> )	Poisson coefficient	Density (kg / m <sup>3</sup> )
concrete dam	3 E+10	0.2	2500
fluid	2.068 E+9	0.49	1000

### Definition of some parameters used in the modal analysis and given by Ansys code

Participation factor

The participation factor for a given excitation is given as:

$$P_{fi} = \{\phi\}_i^T [M] \{D\} \quad (2)$$

Where:

$P_{fi}$  : Participation factor for the  $i^{\text{th}}$  mode.

$\{D\}$  : vector describing the excitation direction

$\{\phi\}_i$  : Normalized Eigenvector

$\{\phi\}_i^T$  : Normalized Eigenvector transpose.

### 3.2. Effective mass

The effective mass in a given direction is defined by:

$$M_{ei} = \frac{P_{fi}^2}{\{\phi\}_i^T [M] \{\phi\}_i} \quad (3)$$

$M_{ei}$  : The effective mass for the  $i^{\text{th}}$  mode

With:

$$\{\phi\}_i^T [M] \{\phi\}_i = 1 \quad (4)$$

It is important to note that in ANSYS code the frequencies are normalized by default with respect to the mass but it is also possible to normalize it with respect to the unity.

Ratio

The ratio is defined as:

$$Ratio = \frac{P_{fi}}{P_{fi\ max}} \quad (5)$$

$P_{fi\ max}$  : The maximal participation factor.

### Modal Analysis Results of multi-arch dam with fixed support

#### a. Dam Alone with Fixed Support

Figure 6 illustrates the effect of water reservoir interaction on the modal behavior of the dam with fixed support, excluding the rock foundation modeling. It should be noted that the added mass approach was employed to represent the fluid, using the SURF element available in the ANSYS library.

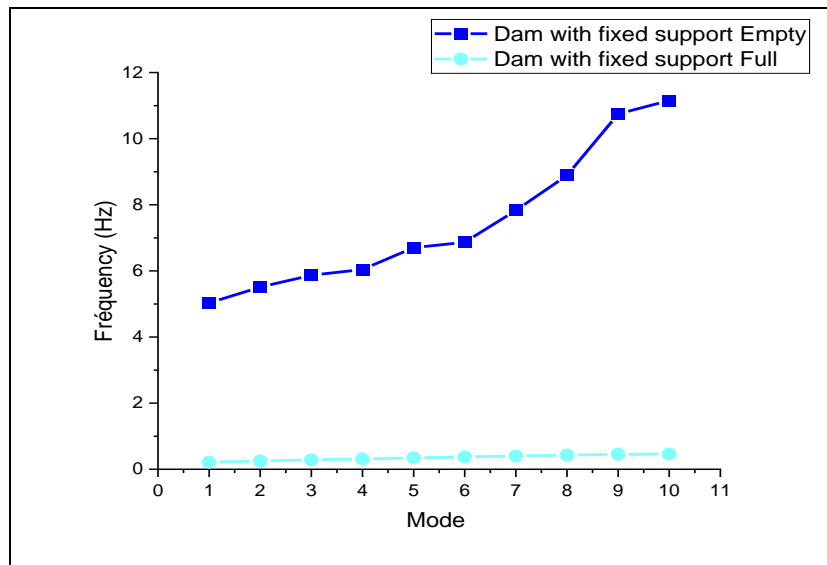


Figure 6: Effect of the interaction between the dam with fixed support and the water reservoir on the modal behavior of the system.

Table 3 summarizes the first ten natural frequencies for each case studied. This comparison helps to better understand the impact of the fluid presence in the reservoir on the dynamic behavior of the dam.

Table 3: Frequency values of the dam with fixed support, empty and filled with fluid.

Modes	Fréquences (Hz)	
	Dam with fixed support empty	Dam with fixed support Full
1	5.02949	0,21263
2	5.51075	0,24914
3	5.86726	0,28375
4	6.04533	0,3135
5	6.70404	0,34366
6	6.86596	0,3732
7	7.83056	0,39999
8	8.89050	0,42713
9	10.7460	0,45515
10	11.1545	0,46202

From Figure 6 and Table 3, it is evident that considering the interaction with the water reservoir decreases the system's frequencies. Adding the fluid makes the structure more flexible and increases its overall mass, leading to a longer natural period.

b. **Dam with Foundation without Mass**

Figure 7 shows the impact of the interaction between the water reservoir and the dam system with a massless rock foundation. In this case, the soil under the dam is assumed to have no mass, simplifying the analysis by neglecting its influence.



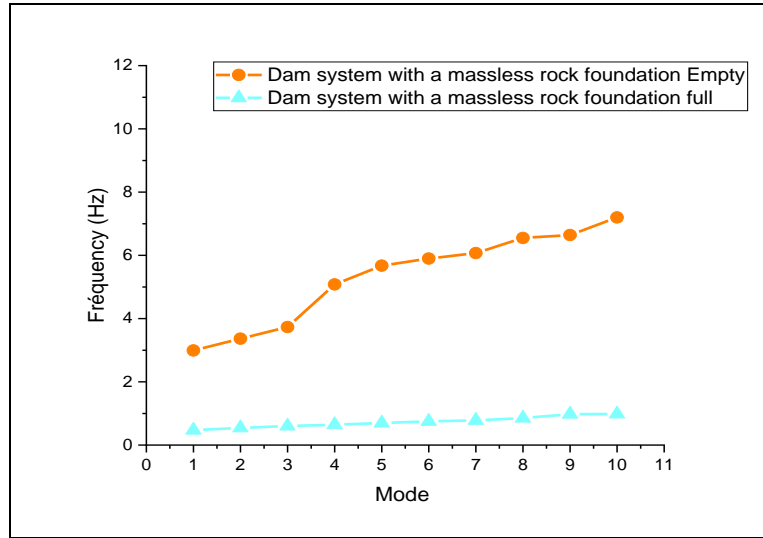


Figure 7: Effect of the interaction between the dam with a massless foundation and the water reservoir on the modal behavior of the system.

Table 4: Frequency values of the dam with a massless foundation, empty and filled with fluid.

Modes	Fréquences (Hz)	
	Dam system with a massless rock foundation Empty	Dam system with a massless rock foundation Full
1	2.99111	0,47195
2	3.36576	0,54345
3	3.73190	0,60061
4	5.08035	0,64616
5	5.67312	0,69682
6	5.89939	0,75142
7	6.07100	0,78004
8	6.55054	0,85065
9	6.64174	0,97783
10	7.19892	0,982

Both Figure 7 and Table 4 clearly demonstrate that the presence of fluid significantly reduces the system's frequencies.

c. **Dam with Rock Foundation**

Figure 8 presents the effect of the interaction between the water reservoir and the dam system with a rock foundation, taking into account the mass of the soil beneath the dam.

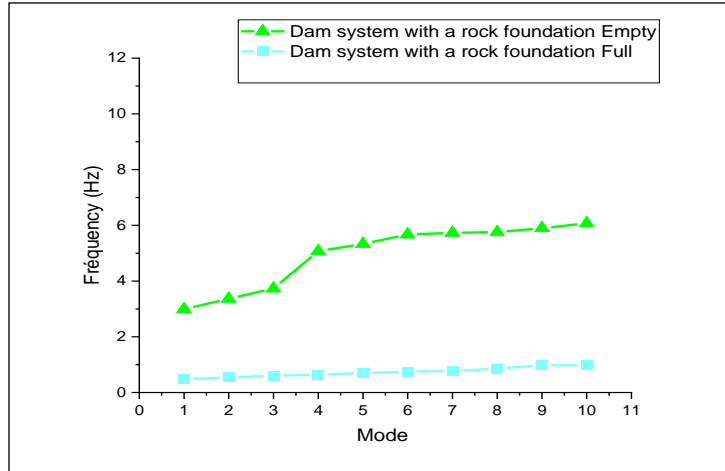


Figure 8: Effect of the interaction between the dam with a rock foundation and the water reservoir on the modal behavior of the system.

Table 5: Frequency values of the dam with a rock foundation, empty and filled with fluid.

Modes	Fréquences (Hz)	
	Dam system with a rock foundation Empty	Dam system with a rock foundation Full
1	2.99105	0,47195
2	3.36555	0,54344
3	3.73170	0,6006
4	5.07287	0,64615
5	5.33374	0,69681
6	5.67144	0,75141
7	5.73336	0,78003
8	5.75706	0,85064
9	5.89724	0,97779
10	6.06977	0,98181

From Figure 8 and Table 5, it is clear that accounting for the effect of the fluid results in a decrease in the structure's vibration frequencies. These results confirm the trends observed in the previous cases of the dam with fixed support and the dam with a massless foundation. The presence of the water reservoir alters the dynamic properties of the structure by increasing the overall mass and introducing hydrodynamic forces, thereby reducing the natural oscillation frequencies.

### Combined Effect of ISS and IFS on Fundamental Frequency

The significant frequency differences between the empty and filled reservoir cases highlight the influence of the membrane effect in the multi-arch system of the Beni Bahdel dam. This effect is linked to how the dam's arch geometry responds to the pressure exerted by the water.

Table 6: Combined effect of ISS and IFS on the fundamental mode of the Beni Bahdel multi-arch dam.

Model	Fondamental frequency without fluid (Empty system)	Fondamental frequency with fluid (Full system)
Dam with fixed support	6.86596 (mode number 06)	0.462017 (mode number 10)
Dam with massless rock foundation	6.07100 (mode number 07)	0.981997 (mode number 10)
Dam with a rock foundation	5.75706 (mode number 08)	0.981812 (mode number 10)

From Table 6, it is evident that the presence of fluid not only reduces the system's fundamental frequency but also alters its mode positioning. This demonstrates how fluid-structure interaction influences the distribution of natural frequencies.

### Conclusion

In this paper, a parametric study for the multi-arch dam "BENI BAHDAL" was carried out using the finite element code "ANSYS" to investigate the effect of the fluid-structure interaction phenomenon on the modal behavior of the dam system with its rock foundation. The modal analysis allowed us to conclude:

The modeling of fluid-structure interaction modifies the dam's frequency, knowing that frequency is a dynamic characteristic that must be considered in the various types of dynamic calculations (spectral, transient...)

The fluid-structure interaction modeling increases system periods.

The large frequency difference between empty and filled cases confirms the membrane effect of the multi arch dam, which is not the case for the Brezina dam but is the case for the oued Taht dam.

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## IMMUNOGENETIC STUDY OF ANKYLOSING SPONDYLARTHROSIS IN THE POPULATION OF WESTERN ALGERIA

Chahinez Amira DAHMANI

Department of Biology, University Abdelhamid Ibn Badis of Mostaganem, Algeria

Laboratory of Molecular and Cellular Genetic, University of Sciences and Technologies of ORAN (USTO), Algeria.

ORCID: 0000-0002-9529-2936

Abdallah BOUDJEMA

Laboratory of Molecular and Cellular Genetic, University of Sciences and Technologies of ORAN (USTO), Algeria.

### ABSTRACT

Ankylosing spondylitis (AS) is a chronic inflammatory rheumatism. More than twenty AS susceptibility loci have been identified to date.

The objective of this work was to search for associations between candidate genes and the disease. We first checked the association between the HLAB27 antigen in the population of western Algeria. Then, we looked for the association between the polymorphisms [CTLA4] rs3087243 (A>G), [REL] rs13031237 (G>T), [CD40] rs4810485 (G>T), [PRKCQ] rs4750316 (G>C) , [ACE] rs4340 (I/D) and SA. We were also interested in studying the impact of copy number variations (CNVs) in the FCGR3A, FCGR3B and CCL3L1 genes.

The present study was carried out on 83 patients and 131 controls, all from western Algeria. Genotyping was performed using the TaqMan® technique for the exploration of SNPs. In addition, we used the multiplex PCR technique for the genotyping of the insertion/deletion polymorphism. Finally, CNV markers were explored by Droplet Digital PCR (ddPCR).

We confirmed the association between HLA-B27 specificity and the occurrence of AS in the population of western Algeria. Furthermore, our results suggest that the G allele of the polymorphism [CTLA4] rs3087243 appears to be associated with the susceptibility of developing AS. To conclude, this study suggests that the polymorphism [CTLA4] rs3087243 and CNVs < 2 copies of the FCGR3A gene would have an independent effect of the HLA-B27 antigen in the genetic contribution of AS in the population of western Algeria.

**Keywords:** Ankylosing spondylitis, HLA-B27, SNPs, CNVs, West Algeria.

## MODELING OF ERROR PROPAGATION N. ELHARRAR AND S. AIT MESSAAD

**Abstract.** The presented work explores the innovative use of the SIR model (Susceptible-Infected-Recovered) in error management in the class room. Introducing a novel approach, the study demonstrates how this model, initially designed to study disease spread, can be adapted to analyze the dynamics of error propagation in an educational environment. Using mathematical simulations, the article illustrates how errors spread among students and how pedagogical interventions can influence this propagation. Furthermore, it proposes innovative strategies to prevent and correct errors, while emphasizing the importance of timely and effective teacher intervention. In conclusion, this work opens a new path in classroom error management and deserves recognition for its originality and potential impact on learning improvement.

2010 Mathematics Subject Classification. Mathematical modeling, Error propagation in the classroom, Learning process, Analysis, Pedagogical and didactic intervention, Education, Error management..

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Elharrar, N., Higher Institute of Nursing Professions and Health Techniques "ISPITS", Safi-Marrakech, Morocco.

E-mail address: noureddine.elharrar1989@gmail.com

AIT MESSAAD, S., Higher Institute of Nursing Professions and Health Techniques "ISPITS", Safi-Marrakech, Morocco.

E-mail address: aitmessaad@gmail.com



## EARTQUAKE ANALYSIS OF RESTING BUILDING ON THE HILLY AREAS

Subhashish Dey

Department of Civil Engineering, Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru,  
Andhra Pradesh, India

Email id: subhasdey633@gmail.com

### Abstract

In many countries, without exception to India, towns and cities are being developed nearby hilly regions also. Due to scarcity of plain terrains, constructions of multi-storied buildings are extended to hilly regions causing vertical irregularities in such buildings. During an earthquake, the dynamic behavior of the structures on hilly slopes will be different in terms of natural time periods and displacements compared to those constructed on plain regions. Examples of severe damages or collapse of buildings, witnessed during 2001 Bhuj, 2011 Sikkim and 2015 Nepal earthquakes, made researchers to study the response of structures standing on hilly regions. In the present study, a multi-storied building (G+5), resting on different slopes like  $15^{\circ}$ ,  $30^{\circ}$ ,  $45^{\circ}$  in hilly regions with stepped back configuration, is chosen for study. The response parameters like natural frequencies, time periods, base shears and displacements are worked out and the results are compared with those when similar building rests on plain region. The vertical irregularity of building causes short column effect particularly in lower parts of stories attracting more shears in columns, which influences the response of the building during an earthquake. The results obtained using “STAAD Pro” software are compared with those of results obtained from manual calculations and the variation is less.

**Keywords:** Building on hilly regions, natural frequencies, time periods, short column effect, base shear, displacements, and software (MAT LAB and STAAD PRO)

## STUDY ON STRENGTH PROPERTIES OF CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY MARBLE POWDER FOR USAGE IN RIGID PAVEMENT

Subhashish Dey

Department of Civil Engineering, Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru,  
Andhra Pradesh, India

Email id: subhasdey633@gmail.com

### Abstract

Bearing capacity of soil is to support the loads applied to the ground. Soil properties like shear strength, density, permeability etc., affect the bearing capacity of soil. To deal with the difficulties involved, in this project an attempt has been made to model safe bearing capacity of soil in terms of Depth of foundation ( $D_f$ ), Dry density ( $\gamma_d$ ), Liquid limit ( $W_L$ ), Plasticity index ( $I_p$ ), Percentage of Fine fraction (FF), N-value (N) and Width/Length ratio of footing (B/L). For these purposes 972 soil data sets was collected from the consultancy cell, department of civil engineering, Geotechnical Engineering Lab, the test results relating a wide range of soil properties. Among the total 778 datasets are used for training, and remaining 194 datasets for testing. Neural network models were tried with  $D_f$ ,  $\gamma_d$ ,  $W_L$ ,  $I_p$ , FF, N and B/L as input parameters and SBC as output parameter. The best neural network model is identified by analyzing the performance of different models developed. Give a better idea than quantities assessment. A graph is plotted between the predicted values and observed values of output (SBC) for training and testing process. From the graph it is found that all the points are close to equality line, indicating predicted values are close to observed values for all output parameters. The Regression coefficient ( $R^2$ ) values for SBC in training and testing are 0.9209 and 0.9581.

**Keywords:** Bearing capacity, Soil, Regression coefficient, Depth of foundation, Parameters, Dry density and Liquid limit

## A STUDY ON RAILWAY ROAD UNDER BRIDGE CONSTRUCTION AND ITS COURSE OF ACTION USING BOX PUSHING TECHNIQUE

**Subhashish Dey**

**Department of Civil Engineering, Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru,  
Andhra Pradesh, India**

**Email id: subhasdey633@gmail.com**

### **Abstract**

Bearing capacity of soil is to support the loads applied to the ground. Soil properties like shear strength, density, permeability etc., affect the bearing capacity of soil. To deal with the difficulties involved, in this project an attempt has been made to model safe bearing capacity of soil in terms of Depth of foundation ( $D_f$ ), Dry density ( $\gamma_d$ ), Liquid limit ( $W_L$ ), Plasticity index ( $I_p$ ), Percentage of Fine fraction (FF), N-value (N) and Width/Length ratio of footing (B/L). For these purposes 972 soil data sets was collected from the consultancy cell, department of civil engineering, Geotechnical Engineering Lab, the test results relating a wide range of soil properties. Among the total 778 datasets are used for training, and remaining 194 datasets for testing. Neural network models were tried with  $D_f$ ,  $\gamma_d$ ,  $W_L$ ,  $I_p$ , FF, N and B/L as input parameters and SBC as output parameter. The best neural network model is identified by analyzing the performance of different models developed. Give a better idea than quantities assessment. A graph is plotted between the predicted values and observed values of output (SBC) for training and testing process. From the graph it is found that all the points are close to equality line, indicating predicted values are close to observed values for all output parameters. The Regression coefficient ( $R^2$ ) values for SBC in training and testing are 0.9209 and 0.9581.

**Keywords: Bearing capacity, Soil, Regression coefficient, Depth of foundation, Parameters, Dry density and Liquid limit**



## ENHANCING PEROVSKITE PHOTOVOLTAIC CELL EFFICIENCY WITH GENERATIVE AI

**Muhammad Mateen Afzal Awan**

**Electrical Engineering Department, University of Management and Technology Lahore-Sialkot**

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### **Abstract:**

Perovskite solar cells (PSCs) have gained significant attention as a promising technology for renewable energy generation due to their high efficiency, low cost, and ease of fabrication. However, challenges such as material instability and performance degradation still hinder their widespread adoption. This research explores the application of Generative Artificial Intelligence (AI) to optimize the efficiency of perovskite photovoltaic cells. By leveraging advanced machine learning models, this study develops a framework for predicting optimal material compositions, enhancing the structural design of the cells, and simulating the impact of various environmental factors on performance. My contribution involves creating a novel AI-driven approach that accelerates the discovery of stable and efficient perovskite materials and their configurations. This approach not only reduces the time and cost of developing high-performance PSCs but also provides insights into new materials and architectures that could drive the next generation of solar cell technology.

**Keywords:** Perovskite Solar Cells, Generative AI, Efficiency Optimization, Machine Learning, Renewable Energy, Photovoltaic Performance, Material Design, AI-Driven Simulations, Solar Energy, Sustainable Energy



## OPTIMIZING PARTICLE SWARM OPTIMIZATION ALGORITHM FOR MAXIMUM POWER POINT TRACKING (MPPT) IN PHOTOVOLTAIC SYSTEMS

Muhammad Mateen Afzal Awan

Electrical Engineering Department, University of Management and Technology Lahore-Sialkot

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### Abstract:

Maximum Power Point Tracking (MPPT) is crucial for enhancing the efficiency of photovoltaic (PV) systems by ensuring that the system operates at its optimal power point under varying environmental conditions. This research focuses on optimizing the Particle Swarm Optimization (PSO) algorithm for MPPT in PV systems. PSO, known for its ability to find optimal solutions in complex, nonlinear, and dynamic environments, is applied to improve the tracking accuracy and speed of MPPT in PV systems. The study proposes several enhancements to the PSO algorithm, including adaptive particle velocity, dynamic fitness functions, and hybridization with other optimization techniques, to address challenges such as fast response time, robustness under fluctuating irradiance, and partial shading. My contribution involves developing an optimized PSO-based MPPT algorithm that outperforms traditional methods in terms of convergence speed, tracking accuracy, and system stability. The proposed optimization techniques are tested on both simulated and real PV systems, demonstrating significant improvements in energy harvesting efficiency. This work provides a pathway for more efficient and reliable MPPT algorithms in modern PV systems.

**Keywords:** Particle Swarm Optimization, Maximum Power Point Tracking, Photovoltaic Systems, MPPT Algorithm, Energy Harvesting, Optimization Techniques, Solar Energy, Renewable Energy, Dynamic Fitness Function, System Efficiency

## OPEN ACCESS AND THE DIGITAL DIVIDE: CHALLENGES AND OPPORTUNITIES FOR LIBRARIES IN THE ICT ERA

Umar Aliyu\*

Department of Library and Information Science, Federal Polytechnic Kaltungo, Gombe State, Nigeria  
[umaraliyu27@gmail.com](mailto:umaraliyu27@gmail.com)

Mohammed Nura Musa

Department of Information and Communication Technology, Federal Polytechnic Kaltungo, Gombe State, Nigeria  
[nure4it@gmail.com](mailto:nure4it@gmail.com)

Abdulbaisu Muhammed Rabi

<sup>3</sup>Department of Management Information System, Federal Polytechnic Kaltungo, Gombe State, Nigeria  
[abdulbaisumrabi@gmail.com](mailto:abdulbaisumrabi@gmail.com)

Jibril Hussein Kawure

Professor Iya Abubakar Community Resources Centre Bauchi, Nigeria  
[kawurejibreel@live.com](mailto:kawurejibreel@live.com)

Usman Yahya Ibrahim

Department of Business Administration, Faculty of Art and Social Science, Gombe State University, Nigeria  
[usmanitgombe@gsu.edu.ng](mailto:usmanitgombe@gsu.edu.ng)

Aminu Adamu Ahmed

Department of Information and Communication Technology, Federal Polytechnic Kaltungo, Gombe State, Nigeria  
[aaahmed.pg@atbu.edu.ng](mailto:aaahmed.pg@atbu.edu.ng)

### Abstract

Open access (OA) and the digital divide pose opportunities as well as challenges for libraries in the Information and Communication Technology (ICT) age. By removing financial barriers, open access programs seek to democratize access to scholarly knowledge; yet, the digital divide is nonetheless made worse by differences in internet accessibility and digital skills, especially in underprivileged places. In order to better understand how libraries might serve as intermediaries in closing the digital gap, this review looks at how open access affects library services. The financial viability of open access models, disparities in user digital literacy, and unequal access to technology are some of the main obstacles. On the other hand, opportunities present themselves as libraries make use of their resources to offer assistance, training, and digital content access, creating a welcoming atmosphere for information exchange. Libraries can significantly contribute to improving information fairness and empowering underserved communities by supporting open access. The analysis ends with suggestions for how libraries may advance open access projects and bridge the digital divide by forming strategic alliances and putting creative outreach programs into place.

**Keywords:** Open Access, Digital Divide, Libraries, Information Equity, ICT Era, Digital Literacy, Knowledge Sharing

## COST REDUCTION IN ORGANIC PHOTOVOLTAIC CELLS USING GENERATIVE AI

**Muhammad Mateen Afzal Awan**

**Electrical Engineering Department, University of Management and Technology Lahore-Sialkot**

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### **Abstract:**

Organic Photovoltaic (OPV) cells are a promising solution for low-cost, flexible, and scalable solar energy generation. Despite their advantages, high production costs and efficiency challenges remain significant barriers to their widespread adoption. This research investigates the application of Generative Artificial Intelligence (AI) to reduce the production costs of organic photovoltaic cells while preserving or improving their efficiency. By leveraging machine learning algorithms, the study develops a framework that optimizes material selection, simplifies fabrication processes, and enhances the scalability of OPV manufacturing. My contribution focuses on creating AI-driven models to identify cost-effective materials, streamline cell design, and optimize manufacturing techniques, thereby reducing both material and labor costs. This approach offers a pathway to making OPV technology more affordable, accelerating the commercialization of organic solar cells as a sustainable and cost-effective energy solution.

**Keywords:** Organic Photovoltaic Cells, Cost Reduction, Generative AI, Machine Learning, Renewable Energy, Low-Cost Materials, Manufacturing Optimization, Photovoltaic Performance, Sustainable Energy, Solar Energy



## IMPROVING MPPT EFFICIENCY WITH MODIFIED PARTICLE SWARM OPTIMIZATION FOR PV SYSTEMS

Muhammad Mateen Afzal Awan

Electrical Engineering Department, University of Management and Technology Lahore-Sialkot

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### Abstract:

This research proposes an enhanced Particle Swarm Optimization (PSO) algorithm for optimizing Maximum Power Point Tracking (MPPT) in photovoltaic (PV) systems. The proposed method introduces a novel modification to the conventional PSO algorithm by incorporating a multi-level adaptive fitness function that dynamically adjusts to fluctuations in solar irradiance and temperature. This modification improves both the convergence speed and stability of the algorithm, enabling faster and more accurate tracking of the maximum power point (MPP), even under rapidly changing environmental conditions. Extensive simulations on a PV system demonstrate that the optimized PSO method significantly boosts energy harvesting efficiency, minimizes power losses, and enhances overall system performance, outperforming traditional MPPT techniques. The proposed approach is particularly effective in scenarios involving partial shading and sudden shifts in irradiance, making it a robust solution for real-world PV systems.

### Keywords:

Modified PSO, Maximum Power Point Tracking, Photovoltaic Systems, MPPT Efficiency, Solar Energy, Multi-Level Fitness Function, Optimization, Renewable Energy, System Stability, Energy Harvesting

## OPTIMIZING ORGANIC PHOTOVOLTAIC CELL EFFICIENCY USING GENERATIVE AI

**Muhammad Mateen Afzal Awan**

**Electrical Engineering Department, University of Management and Technology Lahore-Sialkot**

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### **Abstract:**

This research investigates the use of Generative Artificial Intelligence (AI) to optimize the efficiency of Organic Photovoltaic (OPV) cells, an emerging technology known for its flexibility, low cost, and potential for large-scale production. Despite these advantages, OPVs still struggle to achieve high efficiency and long-term stability. In this work, I contributed by developing a framework that leverages Generative AI models to design and optimize OPV materials and structures. By incorporating machine learning algorithms, my research focuses on enhancing the material selection process, predicting optimal layer configurations, and simulating real-world performance under varying environmental conditions. This approach facilitates rapid design iterations and the discovery of new materials and architectures that significantly improve OPV efficiency. My contribution aims to accelerate the transition of OPV technology toward more efficient, sustainable, and cost-effective energy solutions.

**Keywords:** Generative AI, Organic Photovoltaic Cells, Efficiency Optimization, Machine Learning, Renewable Energy, Material Design, Solar Energy, AI-Driven Simulations, Sustainable Energy, Photovoltaic Performance.

## SUICIDAL TENDENCIES IN LIGHT OF SOME VARIABLES IN NORTHERN

**Dr. Housam Ibrahim: Lecturer at the Faculty of Education**

**Free Aleppo University - Azaz - Syria**

**housamlb1983@gmail.com**

**ORCID ID: <https://orcid.org/0009-0006-8042-9609>**

The research aimed to identify the differences between individuals in northern Syria in the level of suicidal tendencies in light of the following variables: (gender/age group/social status/educational level/work status/health status/physical status/residence status/housing status/birth order/family stability/addiction/security history/ability to reproduce), and the research also aimed to reveal the most common causes of suicide in northern Syria from the point of view of doctors, psychological specialists and prison workers. The descriptive analytical approach was followed because it is consistent with the nature of this research, and the sample consisted of (1200) individuals, and the research tools were the suicidal tendencies scale, and a list of the causes of suicide. Many health centers, hospitals and psychological centers interested in the phenomenon of suicide were visited, and prisons were visited by the research team to obtain accurate information from specialists regarding the phenomenon of suicide. The research team reached the following results:

- The level of suicidal tendencies among males was higher than the average suicidal tendencies among females.
- The level of suicidal tendencies was very high among adolescents and to a lesser extent among adults and to a lesser extent among individuals in the elderly stage.
- The level of suicidal tendencies among divorced individuals was high. -Among the disabled, it was much higher than among the non-disabled -Among the displaced, it was more than among residents.
- Among those living in tents, it was more than among individuals living in houses.
- Among individuals with the middle rank, it was more than among individuals with the first and last rank .
- Among individuals with broken families, it was more than among individuals with non-broken families.
- Among addicts, it was more than among non-addicts.
- As for the most prevalent causes of suicide in northern Syria, the psychological and social causes were at a high level (such as suffering from a high degree of despair and access to lethal means such as firearms and drugs and feeling isolated or not accepted by others), followed by health causes and mental disorders (depression and drug abuse) which were also at a high level, then economic causes and in the last place educational causes .

## MAPPING AND ASSESSMENT OF URBAN SPRAWL USING MACHINE LEARNING ALGORITHMS (SVM AND RF) ON LANDSAT IMAGES: EXAMPLE OF THE CITY OF MOHAMMEDIA AND ITS OUTSKIRTS (MOROCCO)

**RAHIMI Abdelmejid; EL MJIRI Ikram; BOULANOUAR Wardia; SKAKNI Omar and BOUNIF Mohamed**

**Laboratory of Geodynamics and Geomatics, Department of Geology, Faculty of Sciences, Chouaib Doukkali University, El Jadida, Morocco. e-mail : [mjdrahimi@yahoo.fr](mailto:mjdrahimi@yahoo.fr)**

Land artificialisation, which is essentially the consumption of natural areas, leads to major changes in land use and landscape structures. By weakening and fragmenting these areas, land artificialisation has a direct impact on the environment, disrupting ecosystems and biodiversity. The aim of this study is to retrace the history of urban expansion in the city of Mohammedia and its outskirts. This area, located on the Atlantic coast 30 kilometres north of Morocco's economic capital Casablanca, has undergone significant urban expansion in recent decades. An analysis of changes in the surface areas of the various categories of land use in this region, based on supervised classifications of multispectral and multirate images, showed a sharp increase in urban sprawl. The built-up area practically doubled between 1994 and 2024. However, this trend is not uniform and varies from one area to another. Even the rural communes located in the outskirts of the city of Mohammedia have been the most solicited. The application of remote sensing in the assessment of urban sprawl from 1994 to 2024 in the city of Mohammedia and its outskirts has shown that supervised classification algorithms for satellite images such as SVM (support vector machine) and RF (Random Forest) are making a vital contribution to mapping and highlighting urban sprawl. As a result, high spatial resolution remote sensing (in this case Landsat images) appears to be a tool that can help to draw up documents that are essential for controlling and managing urbanisation at the scale of cities and their outskirts.

**key words** : Remote sensing, urban, peri-urban, Landsat satellite imagery, SVM, RF.

## OPTIMIZING MAXIMUM POWER POINT TRACKING IN PHOTOVOLTAIC SYSTEMS USING ARTIFICIAL NEURAL NETWORKS

Muhammad Mateen Afzal Awan

Electrical Engineering Department, University of Management and Technology Lahore-Sialkot

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### Abstract:

This research investigates the application of Artificial Neural Networks (ANN) for optimizing Maximum Power Point Tracking (MPPT) in photovoltaic (PV) systems. ANN, known for their ability to model complex, nonlinear relationships, are employed to predict and track the maximum power point under varying environmental conditions, such as changes in solar irradiance and temperature. The proposed method utilizes a feedforward neural network trained with historical data to continuously estimate the optimal operating point for the PV system. The performance of the ANN-based MPPT is evaluated through simulations, demonstrating improved tracking accuracy, faster response times, and higher energy efficiency compared to traditional MPPT techniques. Furthermore, the ANN-based approach shows robustness in maintaining performance under partial shading and rapid irradiance fluctuations, offering a reliable and efficient solution for maximizing power output in real-world PV systems.

### Keywords:

Artificial Neural Network, Maximum Power Point Tracking, Photovoltaic Systems, MPPT Optimization, Solar Energy, Energy Efficiency, Nonlinear Optimization, Partial Shading, Renewable Energy, Fast Response Time

## ENHANCING MAXIMUM POWER POINT TRACKING IN PHOTOVOLTAIC SYSTEMS USING GENETIC ALGORITHMS

Muhammad Mateen Afzal Awan

Electrical Engineering Department, University of Management and Technology Lahore-Sialkot

[mateen.afzal@skt.umt.edu.pk](mailto:mateen.afzal@skt.umt.edu.pk), [mateenafzalawan@gmail.com](mailto:mateenafzalawan@gmail.com)

### Abstract:

This study explores the use of Genetic Algorithms (GA) to optimize Maximum Power Point Tracking (MPPT) in photovoltaic (PV) systems, aiming to maximize energy production under varying environmental conditions. Genetic Algorithms, with their ability to efficiently explore large solution spaces, are applied to solve the nonlinear and dynamic optimization challenges associated with MPPT. The GA-based approach uses evolutionary techniques, such as selection, crossover, and mutation, to continuously adapt and converge towards the maximum power point (MPP) in real-time. Simulated results demonstrate significant improvements in tracking accuracy, convergence speed, and energy efficiency, particularly under conditions of fluctuating solar irradiance and temperature. This GA-based MPPT method proves to be more robust and efficient compared to traditional algorithms, providing a reliable solution for maximizing energy harvesting in photovoltaic systems, even in the presence of partial shading and rapid environmental changes.

### Keywords:

Genetic Algorithm, Maximum Power Point Tracking, Photovoltaic Systems, MPPT Optimization, Solar Energy, Energy Efficiency, Evolutionary Techniques, Partial Shading, Renewable Energy, Convergence Speed

## FATIGUE LIFE PREDICTION UNDER RANDOM LOADING THROUGH INTEGRATION OF THE RAINFLOW COUNTING METHOD

Sahnoun ZENGAH<sup>1</sup>, Mohammed Mokhtar BOUZIANE<sup>2</sup>, Rachid SAHNOUN<sup>1</sup>

<sup>1</sup>Department of Mechanical Engineering, University of Mustafa Stambouli, Mascara, Algeria, <sup>2</sup>Materials Mechanics, Energy and Environment Laboratory. e-mail: s.zengah@univ-mascara.dz, <sup>2</sup>LMPM, Department of Mechanical Engineering, University of SidiBel Abbes, 22000, Algeria  
agk\_bouziane@yahoo.fr

### Abstract

This study develops an advanced approach for predicting fatigue life under random loading conditions, focusing on the integration of the S-N curve and elastoplastic stress concentration factors to improve accuracy in damage assessment. The Rainflow cycle counting method is utilized to decompose complex stress or strain histories into fundamental cycles, with each identified cycle evaluated for cumulative damage using interpolation of the S-N curve. The research emphasizes the importance of accurately representing material properties and the S-N curve, which is critical for precise fatigue life predictions, particularly for metallic structures subjected to random loading. Fatigue behavior is classified into low-cycle and high-cycle regimes, with the latter including finite and infinite life scenarios. The study examines key parameters governing fatigue, including fatigue life, defined as the total number of cycles to failure under specific mean stress conditions; fatigue limit, representing the maximum stress amplitude below which no failure occurs for an infinite number of cycles; and endurance limit, indicating the stress amplitude at which 50% of specimens fail after a finite number of cycles during censored tests under alternating stresses. By integrating these parameters, the proposed framework provides a comprehensive and reliable methodology for fatigue life estimation, addressing the challenges posed by random and complex loading conditions. This unified approach contributes significantly to the advancement of fatigue analysis and design in engineering applications, ensuring improved durability and safety of components under diverse operating environments.

**Keywords:** Fatigue, Rain flow, Fatigue Life, Random Loading, S-N Curve, Damage Accumulation





## CHALLENGES AND LEGAL PROTECTIONS FOR RELIGIOUS MINORITIES IN PAKISTAN A CRITICAL ANALYSIS

MUHAMMAD FAISAL

MIS/IT Specialist in Ministry of Safron Pakistan

[dr.faisalshabbir88@gmail.com](mailto:dr.faisalshabbir88@gmail.com)

ORCID: 0000-0002-5797-766X

### ABSTRACT

Pakistan's Constitution enshrines religious freedom, as articulated in Article 20, yet the country's religious minorities continue to face significant challenges that undermine these guarantees. This paper critically examines the legal protections and socio-economic realities of non-Muslim communities, including Hindus, Christians, and others. The misuse of blasphemy laws, leading to exploitation and violence, highlights the vulnerability of minorities. Furthermore, systemic exclusion in education, employment, and political representation perpetuates inequality and marginalization. Hindus, especially women and girls, are disproportionately affected by forced conversions and marriages, while Christians face poverty, underrepresentation, and societal discrimination. Recommendations include reforming blasphemy laws, fostering educational inclusion, legislating against forced conversions, and enhancing minority representation. These steps are essential to uphold constitutional guarantees and foster a more inclusive society. This study underscores the urgency of addressing these issues to ensure equitable rights and dignity for all citizens. The rights and challenges of religious minorities in Pakistan, despite constitutional guarantees, remain a pressing concern. Article 20 of Pakistan's Constitution ensures religious freedom, granting individuals the right to practice their faith freely. These rights are not uniformly upheld, particularly for non-Muslims, due to societal and institutional biases. These laws impose severe penalties, including the death sentence, for offenses against Islam or the Prophet Muhammad. Non-Muslim communities, particularly Christians and Hindus, are disproportionately affected, facing accusations often used to settle personal disputes or incite mob violence. Misuse of blasphemy laws leads to intimidation, imprisonment, and even extrajudicial violence against minorities. Promote interfaith dialogues and awareness campaigns to foster understanding and reduce societal prejudices. Addressing these issues holistically will require coordinated efforts between the government, civil society, and international organizations to ensure religious minorities in Pakistan enjoy the rights and freedoms guaranteed by the Constitution.

**Keywords:** segments, ethnic, exemplified, entrenched, disproportionately, mainstream.



## **IMPACT OF HOUSING PERFORMANCE ON PUBLIC HOUSING DEVELOPMENT DAMATURU, LAFIA STATE**

**Dr. Muhammad Umar Bello<sup>1</sup>**

**Postgraduate Student, Department of Estate Management and Valuation  
Faculty Of Environmental Technology  
Abubakar Tafawa Balewa University (ATBU), Bauchi**

**MAS'UDD KASIMU GAYAM<sup>2</sup>**

**Department of Estate Management and Valuation  
Faculty Of Environmental & Earth Science  
Mustapha Agwai Polytechnic Lafia, Nasarawa State**

**Musa Adamu Keffi<sup>2</sup>**

**Department of Estate Management and Valuation  
Isa Mustapha Agwai 1 Polytechnic, Lafiya, Nassarawa State**

**Ahmed Yarima<sup>3</sup>**

**Department of Estate Management  
Faculty of Environmental and Earth Science  
Aliko Dangote University of Science and Technology, Wudil, Kano State**

**Keywords: Housing Maintenance, Housing Performance, Estate, and Public Housing**

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### **ABSTRACT**

Buildings, whether historic or modern, require regular maintenance to prevent them from falling into disrepair. The study aimed to investigate the effective housing performance in Zanna Zakariya Housing Estate Damaturu with a view to improving and enhancing the performance in study area. The study adopted quantitative design and survey strategy was used for data collection. The study used simple random sampling techniques, and the results were presented, and estate occupants served as the population for this study. The study revealed that electrical facilities, wall condition, doors and windows condition, ceiling condition and roofing condition ranked highest housing performance in the study area. The level of housing performance that was ranked moderate housing performance in the study area are security light, fan/air condition, firefighting system and internal/external building cleansing. This indicates residents feel these aspects are well-maintained and contribute significantly to their comfort and safety. The authority should consider a program for refreshing external painting at regular intervals to maintain the building's appearance and potentially improve resident satisfaction. The authority should encourage residents to report any issues they encounter related to electrical systems, doors, windows, etc. This feedback can help identify additional problems and prioritize repairs.

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## INTRODUCTION

It is essential to understand the concepts of "housing" and "maintenance" before delving into the complexities of housing upkeep. Hossain and Ahmed (2022) define housing as accommodations, such as houses or other buildings, where people reside collectively. Maintenance, as described by the same authors, refers to ongoing repair work aimed at keeping a structure or equipment in optimal condition. The British Standards Institution (BS 3811, 1974) further characterizes maintenance as any action taken to retain an item in, or restore it to, an acceptable state.

According to Yap, Chow, and Shavarebi (2019), maintenance encompasses the management of property usage (exploitation), preservation of performance standards, qualities, and lifespan, with the goal of maximizing its full capacity benefits. To ensure that buildings remain functional and durable, regular maintenance is crucial. Inadequate maintenance policies can lead to premature deterioration of components, increased global costs, and ineffective maintenance operations, ultimately resulting in significant risks of failure and a shortened lifespan for these components (Madureira et al., 2017; Holgado, Macchi & Evans, 2020).

Thus, it is vital to establish appropriate maintenance policies tailored to specific projects to develop necessary improvement strategies (Ismail & Zul-Atfi, 2020). The primary objectives of maintenance are to extend the lifespan of buildings, reduce costs, and enhance their value. Zima, Wiczorek, and Przesmycka (2020) classify commercial buildings as structures designed for purposes other than residential, industrial, or agricultural use; examples include offices, grocery stores, hospitals, and schools. These buildings may serve a single function or accommodate multiple uses such as classrooms, dining facilities, and living quarters like dormitories (Frangopol & Liu, 2019). Given the diverse nature of commercial buildings, it is often necessary to adopt varied methodologies for evaluating different types of structures.

## LITERATURE REVIEW

### Concept of Housing Performance

Although, there is a commonly accepted definition of performance evaluation, numerous studies have attempted to offer one. Performance evaluation measures how successfully a process's operations or a method's outputs are used to achieve a certain objective (Kamble & Gunasekaran, 2020). Public and private real estate developers who can evaluate the performance outcomes of their buildings and amenities will be convinced and will investigate their flaws (Darvishmotevali & Ali, 2020). Some of the weaknesses were listed by Rehman and Iqbal (2020) as the main complaints regarding public buildings; these are the structural elements that are related to the building's performance, like the building's finishes, materials used, design, and size, among other things.

Thus, building performance is an evaluation of the building's condition based on users' experiences over time, independent of their individual needs, preferences, or levels of pleasure (Himeur et al., 2021). Performance evaluation is an assessment of the users' experience using its components and features. According to Lee and Kim (2020), the main goal of building performance evaluation is to ensure that buildings operate effectively, efficiently, and in a way that is acceptable to users.

### **Measuring housing performance**

Measurability is one of the main requirements and a crucial element of the performance concept. It is necessary for the objective kinds of procedures and performance concerns. Still, measurability is not the only factor in performance measurement. It also considers important elements that might not be measurable right now. The methods used in the evaluation process are also important factors (Michell, 2022). There are two main elements to the performance technique. The first step, referred to as the audit phase, is identifying and choosing the necessary standards. The second stage focuses on comparing the measured result with the benchmark. This is known as the assessment phase. The actual process and methods could be challenging. The most challenging stage is figuring out what performance means and the key indications that provided a measure of the clearly defined performance before beginning any performance measurement activity. Certain building components' performance can be measured at the "basic level" by using criteria like permeability, water tightness, durability, etc. However, because it implicitly needs to be done at the "major level" (for the entire building), this approach has significant drawbacks when it comes to assessing a building's overall performance (Kamble et al., 2020). The capability to explain and quantify the performance of building has its important benefits in relation to building valuation and evaluation. The result may basically be a procedure to help in choosing of building for the purpose of occupation, rent or purchase. The techniques also provide insight into how to design a building to precisely satisfy performance targets that governments or the private sector may communicate. Consequently, the potential advantages of being able to assess a building's performance more accurately must be considered in the context of the numerous benchmarking techniques, honors, and performance evaluation procedures that are currently in use (Darvishmotevali et al., 2020).

### **RESEARCH METHODOLOGY**

For this research, a quantitative survey research design was used. Research design provides framework for the collection and analysis of data (Bachmann & Bachmann, 2017). This section deals with the arrangement of conditions for collection and analysis in a manner relevant to the research to purpose with economy in procedure (Shirima, 2020). Research design is considered as a "blueprint" for research, it deals with four cardinal points in research which revolves around: which question to study? What are the relevant data? What

data to collect? How to analyse the results? Mostly, the best design in research should depend on the orientation of the research problem.

### **Study Area**

Zanna Zakariya Housing Estate was developed in 2005 and commissioned in the year 2006 during the regime of His Excellency Alh. Bukar Abba Ibrahim, governor of Yobe State from 1999 – 2007. Total number of 700 Houses comprising 2bedroom semi-detached apartments and extensions was developed. This housing estate is located along Gashua road, is also the Northern part of the metropolis (Yobe State Housing Corporation, 2023).

### **Population Of the Study**

The population for the study comprises the household heads living Zanna Zakariya Housing Estate Damaturu Metropolis.

### **Sample Frame**

The sample frame for this study is the total number of seven hundred (700) respondents which constitute residents living in Zanna Zakariya Housing Estate (Yobe State Housing Corporation, 2023).

### **Sample Size**

The sample size of this study is total numbers of 250 household heads living in the study area (Krijce & Morgan, 1970).

### **Sample Technique**

Simple random sampling was used for the study because; household heads are the major people who using and maintaining the housing.

### **Method Of Data Collection**

In this research, questionnaires were used to gather necessary information to provide answers to the research questions. Closed-ended questions will be used to put the questionnaire together. The questionnaire also consisted of multi-choice questions and two-way questions, all targeted at providing information on the aim and objectives of the research.

## **RESULTS AND DISCUSSION**

### **The level of housing performance in the study area**

Descriptive statistics based on mean ranking were carried out to explore the level of housing performance in the study area. The results showed the ranking, mean standard deviation and remark for each variable.

Table 1: Level of Housing Performance in the Study Area

Housing Performance	Mean	Std. Deviation	Ranking	Remarks
Electrical facilities	3.85	1.118	1	High
Wall Condition	3.78	1.096	2	High
Doors and windows condition	3.78	1.173	3	High
Ceiling Condition	3.77	1.151	4	High
Roofing Condition	3.66	1.088	5	High
Floor Condition	3.62	1.169	6	High
Nettings condition	3.51	1.075	7	High
Security light	3.48	1.074	8	Moderate
Fan/Air Condition	3.47	1.078	9	Moderate
Firefighting system	3.11	1.313	10	Moderate
Internal/external building cleansing	2.94	1.475	11	Moderate

Table 1 shows the level of housing performance in the study area that were ranked high by the respondents are electrical facilities, wall condition, doors and windows condition, ceiling condition and roofing condition ranked highest with a mean item scores of 3.85, STD of 1.118, 3.78, STD of 1.096, 3.78, STD of 1.173, 3.77, STD of 1.151 and 3.66, STD of 1.088 as shown in table 5. The level of housing performance that were ranked moderate by the respondents are security light, fan/air condition, firefighting system and internal/external building cleansing with a mean item score of 3.48, STD of 1.074, 3.47, STD of 1.078, 3.11, STD of 1.313 and 2.94, STD of 1.475 respectively. The study's findings on housing performance priorities offer valuable insights but require further analysis due to the mix of building elements and functionalities included. This finding is in line with the study by Abdali (2021) who observed that the findings from mean ranking of the fifteen (15) tangible features of building such as net on windows, heating facilities, burglar proof, floor, cooling facility, security facility, water facility, wall, electrical facility, doors and windows, sanitation facility, ceiling, energy saving facility, roofing and stair case were found to be moderate performance.

### SUMMARY OF FINDINGS

The study revealed that electrical facilities, wall condition, doors and windows condition, ceiling condition and roofing condition ranked highest housing performance in the study area. The level of housing performance that were ranked moderate housing performance in the study area are security light, fan/air condition, firefighting system, and internal/external building cleansing.

## CONCLUSION

The study concludes that the maintenance efforts are effectively addressing critical areas that directly impact livability and comfort. However, focusing on improvements in floor maintenance, netting care, ceiling upkeep, and external painting could further enhance resident satisfaction. Additionally, investigating the reasons behind moderate satisfaction with wastewater disposal might be beneficial to ensure proper functioning and resident well-being.

## RECOMMENDATION

- i. The authority should consider a program for refreshing external painting at regular intervals to maintain the building's appearance and potentially improve resident satisfaction.
- ii. The authority should encourage residents to report any issues they encounter related to electrical systems, doors, windows, etc. This feedback can help identify additional problems and prioritize repairs.

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## EXPLORING THE EFFECT OF SELF-ESTEEM ON WORK-LIFE BALANCE AMONG THE FEMALE LECTURERS IN ODISHA.

**Name of the Authors - Hemalata Bhoi\*,Dr.Rupashree Goswami\*\***

**Name of the Department/ Institution- School of Psychology, Gangadhar Meher University, sambalpur,  
Odisha, India**

**Gmail- [hemalatabhoi1998@gmail.com](mailto:hemalatabhoi1998@gmail.com), [gswamirupashree@gmail.com](mailto:gswamirupashree@gmail.com)**

### ABSTRACT

The need for proper balance between the work-time and family time is an essential factor of life specially for working women. Work-life balance helps a person to achieve his/her goal and maintain a happy life. Another term used for this study is self-esteem. The Self-esteem predict how a person refers his/her overall value/worth. The major goal of this study is to determine, how self-esteem affects the work-life balance. This study used Quantitative research method using cross-sectional survey method by distributing questionnaires to 200 teachers of different colleges and universities in Odisha. Under descriptive statistics, the mean was calculated and under inferential statistics, the correlation and t-test were calculated in this study. This study may contribute for raising awareness to value of perceiving self-esteem in order to maintain the work-life balance.



## EFFECT OF COPPER DOPING ON THE PHYSICAL AND CHEMICAL PROPERTIES OF NICKEL SULFIDE THIN FILMS

Noureddine Lebrini <sup>1\*</sup>, Mohammed Bousseta<sup>1</sup>, Said Elmassi<sup>1</sup>, Mustapha Beraich <sup>1,2</sup>, Lahcen Nkhaili <sup>1</sup>

<sup>1</sup> Laboratory of Materials, Energy and Environment (LaMEE), Faculty of Science Semlalia, Cadi Ayyad University, Marrakech, Morocco.

<sup>2</sup> Higher School of Technology of El Kelaa Des Sraghna, Morocco.

\* [n.lebrini.ced@uca.ac.ma](mailto:n.lebrini.ced@uca.ac.ma)

### Abstrac

Nickel sulfide (NiS<sub>2</sub>) is a promising material for various applications, including hydrogen production and photovoltaic devices, due to its remarkable optical and electronic properties. This study investigates the effect of copper doping on the physical and chemical properties of NiS<sub>2</sub> thin films prepared using the spin-coating method. Different doping concentrations (2%, 4%, 6%, and 8%) were used to analyze their impact on crystal structure, surface morphology, bandgap, and optical properties.

The results reveal that copper incorporation significantly alters the crystal structure, leading to a reduction in the bandgap from 2.3 eV to 1.4 eV as the doping percentage increases. Furthermore, chemical analyses highlight interactions between Cu<sup>2+</sup> ions and the NiS<sub>2</sub> lattice, influencing the electronic and catalytic properties. These modifications make copper-doped films particularly suitable for applications in high-efficiency energy devices.

**Keywords:** Thin film; metal sulfides; photoelectrochemical cell; scanning electron microscopy (SEM); characterization techniques including X-ray diffraction (XRD); ...



## MECHANISTIC STUDY OF FERRICYPHEN OXIDIZING IODIDE IN WATER

**Associate Professor Dr. Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University,**

**Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com**

### ABSTRACT

This research focusses on the kinetics and mechanism of a redox reaction in an aqueous medium involving ferricyphen and iodide. Ferricyphen oxidizes iodide in aqueous solution without the need for external initiation. On a laboratory scale, the redox process was examined spectrophotometrically to evaluate its kinetics at constant ionic strength (60 mM) and room temperature (33 °C). The pseudo-order and integration methods were implemented to identify the overall order and the rate constant of the reaction. To suggest a mechanism, the impact of various experimental settings on the rate/rate constant of the reaction was quantified.





## VISIBLE-LIGHT PHOTOCATALYSIS: BREAKTHROUGH IN ORGANIC POLLUTANT REMOVAL

**Assoc. Prof. Dr Rozina Khattak**

**Department of Chemistry, Shaheed Benazir Bhutto Women University, Peshawar 25000, Pakistan**

**Email: rznkhattak@yahoo.com**

### Abstract

Photocatalysis is a potential approach for removing resistant organic contaminants in water. Superparamagnetic zinc ferrite nanoparticles were synthesized and studied using scanning electron microscopy, X-ray diffraction, energy dispersive X-ray, and Fourier transform infrared spectroscopy. The synthesized nanoparticles (NPs) were found to be photosensitive and exhibited characteristic visible-light-induced activation, which was exploited for the photocatalytic degradation of a textile dye, Remazol brilliant violet 5R. The influence of various operating parameters such as pH,  $H_2O_2$ , catalyst dose, RBV-5R concentration,  $ZnFe_2O_4$  reusability, and scavengers was examined under visible irradiation. The findings suggested that visible-light-induced photocatalysis could be a potential technique for removing hazardous organic dyes from water.





## CTIO CHIEF INFORMATION TECHNOLOGY OFFICER WORK IN ASSET MANAGEMENT INFORMATION SYSTEM AND WATER BILLING WITH DIGITIZED BILL THEN WHAT WORK REQUIRED FOR THIS POSITION

**MUHAMMAD FAISAL**

**MIS/IT Specialist in Ministry of Safron Pakistan**

[dr.faisalshabbir88@gmail.com](mailto:dr.faisalshabbir88@gmail.com)

**ORCID: 0000-0002-5797-766X**

### **ABSTRACT**

Chief Information Officer (CIO), Chief Digital Information Officer (CDIO), or Information Technology (IT) Director working in the domain of Asset Management Information System and water billing with digitized bills, your responsibilities and required tasks would encompass a wide range of strategic, technical, and managerial aspects. Develop a strategic roadmap for implementing and managing the Asset Management Information System and digitized water billing. Align IT initiatives with the organization's overall goals and objectives. Identify opportunities for innovation and digital transformation within asset management and billing processes. Evaluate and select appropriate software solutions for asset management and billing systems. Oversee the implementation and integration of these systems, ensuring they meet the organization's requirements and standards. Manage vendor relationships and contracts related to software procurement and implementation. Develop data management policies and procedures to ensure the accuracy, integrity, and security of asset and billing data. Implement measures to protect sensitive information and ensure compliance with relevant regulations (such as GDPR, HIPAA, etc.). Establish disaster recovery and business continuity plans for critical systems and data. Lead and manage a team of IT professionals responsible for maintaining and supporting the asset management and billing systems. Provide guidance, mentorship, and professional development opportunities to team members. Foster a culture of innovation, collaboration, and continuous improvement within the IT department. Collaborate with key stakeholders across the organization, including departments such as finance, operations, and customer service. Communicate regularly with executive leadership to provide updates on IT initiatives, performance metrics, and risks. Solicit feedback from end-users to ensure that IT solutions meet their needs and expectations. Develop and manage the IT budget for asset management and billing systems, ensuring that expenditures are aligned with strategic priorities. Allocate resources effectively to support ongoing maintenance, upgrades, and enhancements. Identify opportunities for cost optimization and efficiency improvements within the IT infrastructure. Monitor industry trends and emerging technologies relevant to asset management and billing. Identify opportunities for process automation, optimization, and innovation to improve efficiency and effectiveness. Lead initiatives to drive digital transformation and enhance the organization's competitive advantage through technology. Overall, the role of the CIO, CDIO, or IT Director in the context of Asset Management Information System and water billing with digitized bills involves strategic leadership, technology management, and collaboration with various stakeholders to drive business outcomes and ensure the successful implementation and utilization of IT solutions.

**Keywords:** Digital, strategic, Align, GDPR, leadership, trends, effectiveness.



## TANTANGAN DAN SOLUSI DALAM PENYELESAIAN SENGKETA EKONOMI SYARI'AH DI INDONESIA: TINJAUAN TERHADAP PROSEDUR DAN PRAKTIK HUKUM

Nata Rosalia (40122128)

Ekonomi Syariah, Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Pekalongan

Nata.rosalia@mhs.uingusdur.ac.id

### ABSTRACT

This research proposes an approach to overcome challenges in resolving sharia economic disputes in Indonesia. Using qualitative methods with descriptive analysis, this research explores various sources, including literature, legal documents, and related case analysis. Data collected from various perspectives of legal experts, business practitioners and academics provides deep insight into the complexity of the issue. The research results show that the main challenges include a lack of public awareness about sharia principles, a lack of legal experts' ability to interpret sharia law, and a lack of coordination between the parties involved. As a solution, it is necessary to increase public awareness through intensive educational strategies, increase the ability of legal experts through holistic training, and increase coordination through the use of information and communication technology.

**Keywords:** Dispute Resolution, Sharia Economic Law, Sharia Principles, Sharia Economic Growth.

### ABSTRAK

Penelitian ini mengusulkan pendekatan untuk mengatasi tantangan dalam penyelesaian sengketa ekonomi syari'ah di Indonesia. Menggunakan metode kualitatif dengan analisis deskriptif, penelitian ini mengeksplorasi berbagai sumber, termasuk literatur, dokumen hukum, dan analisis kasus terkait. Data yang dikumpulkan dari berbagai perspektif ahli hukum, praktisi bisnis, dan akademisi memberikan wawasan yang mendalam tentang kompleksitas masalah tersebut. Hasil penelitian menunjukkan bahwa tantangan utama meliputi kurangnya kesadaran masyarakat tentang prinsip-prinsip syari'ah, kurangnya kemampuan ahli hukum dalam menginterpretasi hukum syari'ah, dan kurangnya koordinasi antara pihak-pihak terlibat. Sebagai solusi, diperlukan peningkatan kesadaran masyarakat melalui strategi edukasi yang intensif, peningkatan kemampuan ahli hukum melalui pelatihan yang holistik, dan peningkatan koordinasi melalui pemanfaatan teknologi informasi dan komunikasi.

**Kata kunci:** Penyelesaian Sengketa, Hukum Ekonomi Syari'ah, Prinsip-Prinsip Syari'ah, Pertumbuhan Ekonomi Syari'ah.



## 1. PENDAHULUAN

Indonesia, sebagai negara dengan populasi Muslim terbesar di dunia, memiliki potensi besar dalam pengembangan ekonomi syari'ah<sup>1</sup>. Ekonomi syari'ah merupakan sistem ekonomi yang didasarkan pada prinsip-prinsip Islam, yang meliputi larangan riba (bunga), larangan maysir (perjudian), larangan gharar (ketidakpastian yang berlebihan), serta promosi keadilan dan keberpihakan kepada yang lemah dalam transaksi ekonomi<sup>2</sup>. Meskipun Indonesia memiliki landasan hukum untuk mendukung ekonomi syari'ah, seperti Undang-Undang Nomor 21 Tahun 2008 tentang Perbankan Syariah dan Undang-Undang Nomor 23 Tahun 2011 tentang Jaminan Produk Halal, namun penyelesaian sengketa yang berkaitan dengan ekonomi syari'ah masih menghadapi sejumlah tantangan<sup>3</sup>.

Salah satu tantangan utama adalah divergensi interpretasi terhadap prinsip-prinsip syari'ah di antara pemangku kepentingan, termasuk lembaga keuangan syari'ah, pelaku bisnis, dan masyarakat umum<sup>4</sup>. Divergensi ini sering kali memicu konflik dalam transaksi keuangan dan bisnis, yang kemudian menjadi sengketa yang memerlukan penyelesaian hukum. Selain itu, kompleksitas peraturan dan prosedur penyelesaian sengketa di Indonesia juga menjadi hambatan dalam menangani sengketa ekonomi syari'ah. Sistem hukum ganda di Indonesia, yang terdiri dari hukum sipil dan hukum syari'ah, sering kali membingungkan dan memperlambat proses penyelesaian sengketa<sup>5</sup>.

Dalam beberapa tahun terakhir, jumlah sengketa ekonomi syari'ah di Indonesia telah mengalami peningkatan signifikan, yang menunjukkan perlunya pendekatan yang lebih efektif dalam menangani masalah ini<sup>6</sup>. Oleh karena itu, penelitian lebih lanjut diperlukan untuk mengeksplorasi solusi yang tepat dan efektif dalam penyelesaian sengketa ekonomi syari'ah di Indonesia.

## 2. METODOLOGI PENELITIAN

Penelitian ini menggunakan pendekatan kualitatif dengan metode analisis deskriptif untuk mendapatkan pemahaman yang mendalam tentang tantangan dan solusi dalam penyelesaian sengketa ekonomi syari'ah di Indonesia. Data dikumpulkan melalui berbagai sumber, termasuk studi literatur, dokumen hukum terkait, dan analisis kasus-kasus yang relevan. Data yang digunakan dalam penelitian ini mencakup berbagai perspektif dari

<sup>1</sup> Santi, M. (2019). Perkembangan Ekonomi Syariah di Indonesia. *Jurnal Eksyar: Jurnal Ekonomi Syariah*, 7(01), 47-56.

<sup>2</sup> Wasiaturrahma, D. (2022). Perkembangan perbankan syariah di indonesia dari masa ke masa.

<sup>3</sup> Stiyana, V. M. (2018). *Sistem Pengawasan Otoritas Jasa Keuangan Pada Jasa Keuangan Syari'ah Perspektif Hukum Islam (Analisis Undang-Undang Nomor 21 Tahun 2011 Tentang Otoritas Jasa Keuangan)* (Doctoral dissertation, UIN Raden Intan Lampung).

<sup>4</sup> Soemitra, A. (2014). *Masa depan pasar modal syariah di Indonesia*. Prenada Media.

<sup>5</sup> Harun, I. A., Suleman, Z., & Yusuf, S. D. (2023). Sengketa Ekonomi Syariah dan Hambatan Penyelesaiannya di Pengadilan Agama Gorontalo. *Tamaddun Journal of Islamic Studies*, 2(1), 37-47.

<sup>6</sup> Hardani, S., & Hasanah, N. (2022). Implementasi Kompilasi Hukum Ekonomi Syariah (Khes) Dalam Menyelesaikan Sengketa Ekonomi Syariah Di Pengadilan Agama Di Provinsi Riau. *Hukum Islam*, 22(1), 141-163.

ahli hukum, praktisi bisnis, akademisi, dan pihak-pihak yang terlibat secara langsung dalam penyelesaian sengketa ekonomi syari'ah di Indonesia. Informasi tersebut diperoleh melalui berbagai sumber, seperti publikasi resmi, laporan industri, seminar, dan diskusi panel<sup>1</sup>.

Analisis tema digunakan sebagai kerangka kerja untuk mengidentifikasi dan menganalisis pola-pola yang muncul dari data yang terkumpul<sup>2</sup>. Dengan pendekatan ini, peneliti dapat mengidentifikasi tantangan utama yang dihadapi dalam penyelesaian sengketa ekonomi syari'ah di Indonesia, serta mencari solusi yang berpotensi untuk mengatasi kendala-kendala tersebut. Melalui pendekatan ini, peneliti berharap dapat memberikan kontribusi yang signifikan dalam memahami dinamika penyelesaian sengketa ekonomi syari'ah di Indonesia dan menyediakan landasan bagi pengembangan kebijakan yang lebih efektif dalam mendukung pertumbuhan ekonomi syari'ah di negara ini..

### 3. HASIL DAN PEMBAHASAN

Penyelesaian sengketa ekonomi syari'ah di Indonesia bukan hanya sekadar masalah hukum, tetapi juga mencakup dimensi sosial, ekonomi, dan politik yang kompleks. Dalam konteks ekonomi syari'ah, sengketa yang timbul seringkali berkaitan dengan transaksi keuangan dan bisnis yang mencakup berbagai aspek ekonomi, seperti perbankan, asuransi, investasi, dan perdagangan<sup>3</sup>. Dampak dari sengketa ekonomi syari'ah bisa sangat signifikan terhadap stabilitas dan kepercayaan dalam sistem ekonomi syari'ah di Indonesia. Ketidakpastian yang muncul akibat sengketa dapat menghambat investasi, mengganggu arus modal, dan merusak citra industri keuangan syari'ah di mata nasabah dan investor, baik domestik maupun internasional<sup>4</sup>. Oleh karena itu, penyelesaian sengketa yang efektif tidak hanya penting untuk menjaga keadilan, tetapi juga untuk memastikan kelancaran dan keberlanjutan pertumbuhan sektor ekonomi syari'ah.

Sebagai negara dengan populasi Muslim terbesar di dunia, Indonesia memiliki potensi besar dalam pengembangan ekonomi syari'ah. Namun, tantangan dalam penyelesaian sengketa ekonomi syari'ah masih menjadi hambatan yang perlu diatasi untuk memaksimalkan potensi sektor ini<sup>5</sup>. Diantara tantangan tersebut adalah kompleksitas aturan dan prosedur hukum, divergensi interpretasi terhadap prinsip-prinsip syari'ah, serta kurangnya kesadaran dan pemahaman masyarakat tentang ekonomi syari'ah. Dengan mengatasi tantangan-tantangan tersebut, Indonesia dapat memperkuat posisinya sebagai pusat ekonomi syari'ah global dan

<sup>1</sup> Fadli, M. R. (2021). Memahami desain metode penelitian kualitatif. *Humanika, Kajian Ilmiah Mata Kuliah Umum*, 21(1), 33-54.

<sup>2</sup> Majid, A. (2017). *Analisis Data Penelitian Kualitatif*. Penerbit Aksara Timur.

<sup>3</sup> Hariyanto, E. (2014). Penyelesaian sengketa ekonomi syariah di indonesia. *IQTISHADIA Jurnal Ekonomi & Perbankan Syariah*, 1(1), 42-58.

<sup>4</sup> Wahdaniah, B., Adriaman, M., Rasjid, H., Ruslan, D. A. R., Hermanto, H., Jailani, H. Y., ... & Dyastuti, R. M. (2024). *Hukum Lembaga Keuangan*. CV. Gita Lentera.

<sup>5</sup> Abas, M., Sunarto, S., Sudrajat, A. S. S. N. S., Jumali, E., Qurtubi, A. N., Baroroh, H., ... & Anam, M. (2023). *HUKUM EKONOMI SYARI'AH*. PT. Sonpedia Publishing Indonesia.

meningkatkan kontribusinya terhadap pembangunan ekonomi yang inklusif dan berkelanjutan<sup>1</sup>. Oleh karena itu, penelitian dan pengembangan strategi penyelesaian sengketa ekonomi syari'ah yang efektif merupakan langkah krusial dalam membangun fondasi yang kuat bagi pertumbuhan ekonomi syari'ah di Indonesia.

## Tantangan

### 1. Kurangnya Kesadaran Masyarakat

Tantangan yang dihadapi akibat kurangnya kesadaran masyarakat tentang prinsip-prinsip syari'ah dalam transaksi keuangan dan bisnis memang menjadi permasalahan yang signifikan dalam penyelesaian sengketa ekonomi syari'ah di Indonesia<sup>2</sup>. Fenomena ini dapat dipahami sebagai dampak dari kurangnya pemahaman masyarakat terhadap implikasi hukum dan etika syari'ah dalam konteks ekonomi modern. Kurangnya kesadaran ini seringkali disebabkan oleh berbagai faktor, termasuk minimnya pendidikan formal tentang ekonomi syari'ah di kalangan masyarakat umum, kurangnya akses terhadap informasi yang jelas dan mudah dipahami tentang prinsip-prinsip syari'ah, serta minimnya peran serta ulama dan cendekiawan syari'ah dalam menyampaikan pesan-pesan penting tentang pentingnya mengintegrasikan prinsip-prinsip syari'ah dalam transaksi keuangan dan bisnis.

Efek dari kurangnya kesadaran ini dapat sangat merugikan, tidak hanya bagi individu yang terlibat dalam transaksi, tetapi juga bagi masyarakat secara keseluruhan. Ketika masyarakat tidak memperhatikan atau mengabaikan aspek syari'ah dalam transaksi keuangan dan bisnis, hal ini dapat menimbulkan konflik dan sengketa yang sulit untuk diselesaikan, karena masing-masing pihak mungkin memiliki pemahaman yang berbeda tentang prinsip-prinsip syari'ah yang berlaku. Kurangnya kesadaran masyarakat juga dapat menghambat perkembangan ekonomi syari'ah secara keseluruhan. Keterlibatan yang minim dari masyarakat dalam praktik ekonomi syari'ah dapat mengurangi permintaan terhadap produk-produk dan layanan syari'ah, serta mengurangi kepercayaan dan minat investor terhadap industri keuangan syari'ah di Indonesia.

### 2. Kurangnya Kemampuan Ahli Hukum

Kurangnya kemampuan ahli hukum dalam menginterpretasi prinsip-prinsip syari'ah merupakan tantangan serius dalam penyelesaian sengketa ekonomi syari'ah di Indonesia. Ahli hukum yang kurang memahami prinsip-prinsip syari'ah cenderung memiliki keterbatasan dalam memahami kompleksitas hukum syari'ah yang relevan dalam transaksi keuangan dan bisnis<sup>3</sup>. Hal ini dapat mengakibatkan penyelesaian sengketa yang tidak memadai atau bahkan tidak sesuai dengan prinsip-prinsip syari'ah, yang pada gilirannya dapat menimbulkan

<sup>1</sup> Romdoni, I. A. (2023). Tinjauan Hukum atas Pelaksanaan Pengadilan Ekonomi Syariah di Indonesia. *Justisia: Jurnal Ilmu Hukum*, 1(2), 51-59.

<sup>2</sup> Abas, M., Sunarto, S., Sudrajat, A. S. S. N. S., Jumali, E., Qurtubi, A. N., Baroroh, H., ... & Anam, M. (2023). *HUKUM EKONOMI SYARI'AH*. PT. Sonpedia Publishing Indonesia.

<sup>3</sup> Mujahidin, A. (2018). *Ruang Lingkup dan Praktik Mediasi Sengketa Ekonomi Syari'ah*. Deepublish.

ketidakpuasan dan ketidakpercayaan dari pihak-pihak yang terlibat dalam sengketa. Faktor yang menyebabkan kurangnya kemampuan ahli hukum dalam menginterpretasi prinsip-prinsip syari'ah bisa berasal dari pendidikan formal yang tidak memadai tentang hukum syari'ah di lembaga-lembaga pendidikan hukum, kurangnya pelatihan khusus yang diselenggarakan untuk meningkatkan pemahaman mereka tentang hukum syari'ah, serta kurangnya akses terhadap literatur dan sumber daya yang relevan tentang hukum syari'ah. Dampak dari kurangnya kemampuan ahli hukum dalam menginterpretasi prinsip-prinsip syari'ah dapat sangat merugikan dalam konteks penyelesaian sengketa ekonomi syari'ah. Misinterpretasi atau ketidakpahaman terhadap prinsip-prinsip syari'ah dapat menghasilkan keputusan yang tidak akurat atau tidak sesuai dengan hukum syari'ah, yang pada akhirnya dapat memperburuk sengketa yang sedang berlangsung<sup>1</sup>.

### 3. Kurangnya Koordinasi Antara Pihak-Pihak

Kurangnya koordinasi antara pihak-pihak yang terlibat dalam penyelesaian sengketa ekonomi syari'ah merupakan tantangan serius yang dapat menghambat proses penyelesaian dengan efektif dan efisien. Koordinasi yang kurang baik dapat mengakibatkan berbagai masalah, mulai dari kesulitan dalam mengumpulkan bukti dan informasi yang diperlukan hingga kesulitan dalam merumuskan strategi penyelesaian yang tepat<sup>2</sup>.

Salah satu penyebab utama kurangnya koordinasi adalah adanya kesenjangan informasi antara pihak-pihak yang terlibat. Misalnya, ahli hukum, mediator, dan arbiter mungkin memiliki pemahaman yang berbeda tentang aspek-aspek hukum syari'ah yang relevan dalam sengketa, yang dapat menghambat komunikasi dan kolaborasi yang efektif di antara mereka. Selain itu, kurangnya komunikasi yang terbuka dan transparan antara pihak-pihak yang terlibat juga dapat menyebabkan ketidakpercayaan dan ketegangan yang dapat memperburuk sengketa yang sedang berlangsung<sup>3</sup>.

Pembahasan hasil penelitian menunjukkan bahwa solusi yang efektif dalam menyelesaikan sengketa ekonomi syari'ah di Indonesia meliputi:

#### 1. Peningkatan Kesadaran Masyarakat

Solusi yang efektif dalam menyelesaikan sengketa ekonomi syari'ah di Indonesia menyoroti kebutuhan akan peningkatan kesadaran masyarakat tentang prinsip-prinsip syari'ah yang menjadi landasan dalam transaksi keuangan dan bisnis<sup>4</sup>. Untuk mencapai hal ini, strategi edukasi dan kampanye yang lebih intensif menjadi krusial. Melalui upaya-upaya tersebut, masyarakat dapat diberikan pemahaman yang lebih mendalam tentang

<sup>1</sup> Cahyadi, T. N. (2016). PENYELESAIAN SENGKETA PERBANKAN SYARIAH (Kritik atas *Contradictio in Terminis* Pasal 55 Undang-undang no. 21 Tahun 2008 Tentang Perbankan Syariah). *JESI (Jurnal Ekonomi Syariah Indonesia)*, 1(2), 15-29.

<sup>2</sup> Sumanda, R., Dedi, S., & Saputra, H. (2020). *Penyelesaian Sengketa Ekonomi Syariah di Pengadilan Agama Bengkulu Study Kasus Putusan Perkara Nomor: 0161/Pdt. G/2017/PA. Bn* (Doctoral dissertation, IAIN Curup).

<sup>3</sup> Rahmawati, I. N., Sh, M. H., & Rukiyah Lubis, S. H. (2018). *Win-Win Solution Sengketa Konsumen*. MediaPressindo.

<sup>4</sup> Nainggolan, B. (2023). *Perbankan syariah di Indonesia*. PT. RajaGrafindo Persada-Rajawali Pers.

nilai-nilai syari'ah yang mendasari ekonomi syari'ah, serta konsekuensi hukum dari pelanggaran terhadap prinsip-prinsip tersebut. Pendidikan dan sosialisasi tentang ekonomi syari'ah dapat dilakukan melalui berbagai kanal, termasuk lembaga pendidikan, media massa, seminar, dan program-program edukasi yang diselenggarakan oleh lembaga-lembaga keuangan syari'ah dan lembaga non-pemerintah lainnya. Dengan meningkatkan pemahaman masyarakat tentang prinsip-prinsip syari'ah, diharapkan dapat mengurangi kemungkinan terjadinya sengketa ekonomi syari'ah yang disebabkan oleh ketidaktahuan atau kesalahpahaman<sup>1</sup>. Selain itu, penting juga untuk melibatkan ulama dan cendekiawan syari'ah dalam upaya peningkatan kesadaran masyarakat. Peran mereka dalam memberikan pemahaman yang benar dan mendalam tentang prinsip-prinsip syari'ah dapat memberikan legitimasi yang kuat terhadap praktik ekonomi syari'ah<sup>2</sup>. Dengan demikian, masyarakat akan lebih termotivasi untuk mematuhi prinsip-prinsip tersebut dalam transaksi keuangan dan bisnis mereka. Dalam konteks ini, pemerintah dan lembaga terkait juga memiliki peran penting dalam menyediakan infrastruktur dan dukungan yang diperlukan untuk meningkatkan kesadaran masyarakat tentang ekonomi syari'ah. Melalui kerjasama antara berbagai pemangku kepentingan, diharapkan solusi ini dapat menjadi langkah awal yang efektif dalam mengatasi tantangan dalam penyelesaian sengketa ekonomi syari'ah di Indonesia dan memperkuat fondasi ekonomi syari'ah di negara ini.

## 2. Peningkatan Kemampuan Ahli Hukum

Solusi penting lainnya dalam menyelesaikan sengketa ekonomi syari'ah di Indonesia adalah dengan meningkatkan kemampuan ahli hukum dalam menginterpretasi prinsip-prinsip syari'ah. Pelatihan dan pengembangan kemampuan yang lebih baik menjadi kunci dalam hal ini. Diperlukan pendekatan yang holistik dalam meningkatkan pemahaman ahli hukum tentang prinsip-prinsip syari'ah, termasuk juga pemahaman tentang konteks ekonomi modern. Pelatihan tersebut dapat mencakup berbagai aspek, mulai dari studi syari'ah yang mendalam hingga pemahaman tentang aplikasi prinsip-prinsip syari'ah dalam konteks ekonomi dan keuangan. Kolaborasi antara lembaga pendidikan, lembaga hukum, dan praktisi ekonomi syari'ah juga dapat meningkatkan pemahaman ahli hukum tentang isu-isu yang relevan dalam penyelesaian sengketa ekonomi syari'ah. Diskusi dan pertukaran pengetahuan antara ahli hukum syari'ah dan praktisi ekonomi syari'ah dapat membantu memperdalam pemahaman mereka tentang kompleksitas masalah yang dihadapi dalam penyelesaian sengketa<sup>3</sup>.

<sup>1</sup> Nasaruddin, N. (2020). Peradilan Agama di Indonesia dan Sengketa Ekonomi Syariah.

<sup>2</sup> Husaini, H., Mariani, M., Hasan, A., & Jalaluddin, J. (2023). Peran Hukum Islam dalam Pembangunan Hukum Nasional di Indonesia. *UNES Law Review*, 6(2), 4285-4292.

<sup>3</sup> Mala, A. M. Z., & WALISONGO, I. A. I. N. (2009). Studi tentang pelaksanaan mediasi di Pengadilan Negeri Kelas 1A Semarang.

Selain itu, penting juga untuk memastikan bahwa ahli hukum memiliki akses yang memadai terhadap sumber daya informasi dan referensi yang relevan tentang hukum syari'ah. Hal ini dapat dilakukan melalui penyediaan akses ke perpustakaan digital, publikasi, dan sumber daya online lainnya yang membahas masalah hukum syari'ah secara mendalam. Dengan meningkatkan kemampuan ahli hukum dalam menginterpretasi prinsip-prinsip syari'ah, diharapkan dapat tercipta kohesi yang lebih baik antara aspek hukum dan prinsip-prinsip syari'ah dalam penyelesaian sengketa ekonomi syari'ah di Indonesia. Hal ini akan memungkinkan untuk lebih tepat dan adil dalam penyelesaian sengketa, serta memperkuat kepercayaan masyarakat terhadap sistem hukum syari'ah.

### 3. Koordinasi Antara Pihak-Pihak

Koordinasi antara pihak-pihak yang terlibat dalam penyelesaian sengketa merupakan elemen krusial dalam menjaga kelancaran dan efisiensi proses penyelesaian. Salah satu solusi yang efektif dalam meningkatkan koordinasi ini adalah melalui penggunaan teknologi informasi dan komunikasi (TIK) yang lebih baik. Penerapan TIK dapat memfasilitasi komunikasi dan kolaborasi antara berbagai pihak yang terlibat dalam penyelesaian sengketa ekonomi syari'ah. Platform daring, seperti portal berbasis web atau aplikasi khusus, dapat digunakan untuk memfasilitasi pertukaran informasi, dokumentasi, dan komunikasi antara para pemangku kepentingan, termasuk ahli hukum, mediator, arbiter, dan pihak-pihak yang terlibat dalam sengketa<sup>1</sup>. Teknologi yang terkini juga dapat digunakan untuk meningkatkan transparansi dan akuntabilitas dalam penyelesaian sengketa. Misalnya, sistem manajemen kasus digital dapat digunakan untuk melacak dan memantau perkembangan sengketa secara real-time, sehingga memudahkan pemangku kepentingan untuk mengakses informasi terkini mengenai status dan progres penyelesaian sengketa<sup>2</sup>.

Penggunaan teknologi juga dapat membantu mengurangi biaya dan waktu yang diperlukan dalam penyelesaian sengketa dengan mengeliminasi kebutuhan akan pertemuan fisik yang seringkali merepotkan. Dengan adanya opsi untuk melakukan pertemuan virtual, pihak-pihak yang terlibat dalam sengketa dapat berinteraksi secara efisien tanpa harus berkumpul secara fisik di lokasi yang sama. Selain itu, penggunaan teknologi juga dapat meningkatkan aksesibilitas terhadap proses penyelesaian sengketa bagi pihak-pihak yang berada di daerah terpencil atau memiliki keterbatasan mobilitas<sup>3</sup>. Dengan demikian, teknologi informasi dan komunikasi

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<sup>1</sup> Nugroho, Y. S. (2024). Tantangan dan Prospek Pengembangan Arbitrase Online sebagai Alternatif Penyelesaian Sengketa dalam Era Digital. *IJESPG (International Journal of Engineering, Economic, Social Politic and Government)*, 2(1), 58-69.

<sup>2</sup> Fauzi, A. A., Kom, S., Kom, M., Budi Harto, S. E., Mm, P. I. A., Mulyanto, M. E., ... & Rindi Wulandari, S. (2023). *Pemanfaatan Teknologi Informasi di Berbagai Sektor Pada Masa Society 5.0*. PT. Sonpedia Publishing Indonesia.

<sup>3</sup> Muhammad Rusli, M. T., Hermawan, D., & Supuwingsih, N. N. (2020). *Memahami E-learning: Konsep, Teknologi, dan Arah Perkembangan*. penerbit andi.



memiliki potensi besar untuk meningkatkan efektivitas dan efisiensi penyelesaian sengketa ekonomi syari'ah di Indonesia melalui peningkatan koordinasi antara pihak-pihak yang terlibat.

#### 4. KESIMPULAN

Kesimpulan dari pembahasan yang telah disampaikan menyoroti kompleksitas dan pentingnya penyelesaian sengketa ekonomi syari'ah di Indonesia. Tantangan yang dihadapi, seperti kurangnya kesadaran masyarakat, kurangnya kemampuan ahli hukum dalam menginterpretasi prinsip-prinsip syari'ah, dan kurangnya koordinasi antara pihak-pihak yang terlibat, menegaskan perlunya strategi yang komprehensif dan terkoordinasi untuk mengatasi masalah ini. Peningkatan kesadaran masyarakat tentang prinsip-prinsip syari'ah, meningkatkan kemampuan ahli hukum dalam memahami hukum syari'ah, dan peningkatan koordinasi antara pihak-pihak yang terlibat adalah langkah-langkah penting yang dapat diambil untuk meningkatkan efektivitas penyelesaian sengketa ekonomi syari'ah. Diperlukan upaya bersama dari berbagai pemangku kepentingan, termasuk pemerintah, lembaga pendidikan, praktisi hukum, dan masyarakat sipil, untuk menciptakan lingkungan yang mendukung penyelesaian sengketa yang adil, efisien, dan sesuai dengan prinsip-prinsip syari'ah.

Selain itu, penggunaan teknologi informasi dan komunikasi juga dapat menjadi solusi yang efektif untuk meningkatkan koordinasi dalam penyelesaian sengketa. Melalui pemanfaatan platform daring dan aplikasi khusus, pertukaran informasi dan komunikasi antara pihak-pihak yang terlibat dapat lebih efisien dan transparan. Dengan demikian, penelitian dan pengembangan strategi penyelesaian sengketa ekonomi syari'ah yang efektif merupakan langkah krusial dalam membangun fondasi yang kuat bagi pertumbuhan ekonomi syari'ah di Indonesia. Dengan mengatasi tantangan yang ada, Indonesia dapat memaksimalkan potensi sektor ekonomi syari'ah dan memperkuat kontribusinya terhadap pembangunan ekonomi yang inklusif dan berkelanjutan, sehingga menjadi bagian integral dari pusat ekonomi syari'ah global.

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## IMPACT OF A MINE-BLAST INJURY ON A MENTAL HEALTH OF UKRAINIAN COMBATANTS. PREVENTIVE AND PSYCHOEDUCATIONAL MEASURE

**Biletska Anna**

**Bachelor of Psychology, Jean-François Champollion National University Institute for Teaching and  
Research, Albi, France [annabeletskaya123@gmail.com](mailto:annabeletskaya123@gmail.com)**

**Olena Lykholat**

**Professor of Psychology, University of Customs and Finances, Dnipro, Ukraine,**

**ORCID NO: 0000-0002-3722-8602 [Lykholat2010@ukr.net](mailto:Lykholat2010@ukr.net)**

### **Summary:**

In our previous study, “IMPACT OF A MINE-BLAST INJURY ON A MENTAL HEALTH OF UKRAINIAN COMBATANTS,” we examined the impact of mine-blast injuries on the mental health of Ukrainian combatants. The empirical study revealed a positive correlation between levels of anxiety, depression, and PTSD and the degree of psychopathization among military personnel who had experienced mine-blast injuries. Based on these results, we emphasized in our work the significance of not only rehabilitating military personnel who have already experienced such trauma but also addressing the crucial role of working with their families. Families must be prepared for the psychological changes in military members who have experienced mine-blast injuries. In addition, we underscored the importance of preventive measures.

In Paris, we conducted preventive psychoeducational work for Ukrainian youth in France who were forced to leave Ukraine due to the war. Most of them are children of military personnel or children who have experienced Russian occupation. During this work, we explained the concept of mine-blast injury, PTSD, the risks it poses, its symptoms, and its causes. We also introduced methods of providing first psychological aid and shared the YALOM protocol. Participants engaged in simulations of combat situations, explosions, and mine-blast injuries, allowing them to practice offering first psychological aid. We hope that this knowledge will never be needed, but if it is, the participants will already know how to assist others in cases of combat stress. Timely psychological aid can reduce the risk of PTSD or alleviate its symptoms.

**Keywords: mine-blast injury, military personnel, PTSD, social adaptation, rehabilitation, preventive psychoeducation**

## SEAWEED FARMING IN SOUTH LAMPUNG: TRENDS IN PRODUCTION VOLUME AND ECONOMIC VALUE (2019-2024)

BERTA PUTRI

ORCID: <https://orcid.org/0000-0003-2098-0029>

[bertaputri.unila@gmail.com](mailto:bertaputri.unila@gmail.com)

University of Lampung, Agriculture Faculty, Fisheries and Marine Department

(Bandar Lampung , Indonesia)

### Abstract

#### Abstract

This research explores the productivity trends of in South Lampung from 2019 to 2024, focusing on the growth in both production output and economic value. During this five-year span, seaweed production has experienced notable growth, driven by advancements in cultivation methods, favorable environmental factors, and a rise in market demand. The data for this research were obtained from South Lampung Statistical Center wich its come from local fisheries. A statistical analysis was performed using a linear regression model to assess the relationship between production volume and value during the given period. The findings showed a strong positive correlation (Pearson correlation coefficient), suggesting that as seaweed production volume grew, its economic value also increased considerably. Furthermore, an ANOVA test was conducted to examine the variation in production volumes over the years, revealing a statistically significant increase ( $p < 0.001$ ). These results indicate that the seaweed farming industry in South Lampung has become more productive and economically significant, fueled by improvements in aquaculture techniques and strong market growth. The study highlights the importance of ongoing support and innovation in seaweed farming to maintain this positive trend.

**Keyword: productivity trends, production output, seaweed, South Lampung,**

**EMPLOYEE ENGAGEMENT IN THE DIGITAL AGE: ONLINE PLATFORMS AND APPLICATIONS****Dr.M.K.GANESHAN****Assistant Professor****Department of Management Studies****MIET Engineering College****Tiruchirappalli-620 007****Tamil Nadu, India****Mobile no. 9679523438****E-mail- [mkganeshanmba@gmail.com](mailto:mkganeshanmba@gmail.com)****<https://orcid.org/0000-0003-2407-1527>****Abstract**

Employee engagement describes the level of enthusiasm and dedication a worker feels toward their job. Employee engagement is critical for organizational success. The digital age has transformed how organizations interact with and motivate their workforce. Online platforms and applications are increasingly being utilized to enhance engagement, offering real-time communication, recognition programs, and personalized feedback mechanisms. This research examines the role of digital tools in fostering employee engagement, focusing on their effectiveness, challenges, and future potential. There are some key features of engagement platforms, such as gamification, AI-driven analytics, and mobile accessibility, which are explored to understand their impact on motivation, productivity, and retention. The study also highlights the challenges of digital adoption, including data privacy, technology, and diverse workforces. Findings make known that organizations leveraging these tools report improved communication, stronger team unity, and higher levels of employee satisfaction. However, a balanced approach combining digital tools with traditional engagement strategies is recommended to address the limitations of a fully digital approach. This research is also the need for organizations to adopt innovative and ethical practices to maximize the potential of online platforms in enhancing employee engagement in the digital era.

**Keywords:** Employee engagement, digital age, online platforms, application, AI-driven analytics.

**LUXURY GOODS SALES TAX (PPnBM): AN ANALYSIS OF ITS IMPACT ON PURCHASING  
POWER OF PUBLIC CONSUMPTION**

**LÜKS MALLAR SATIŞ VERGİSİ (PPnBM): KAMU TÜKETİMİNİN SATIN ALMA GÜCÜ  
ÜZERİNDEKİ ETKİSİNİN ANALİZİ**

**Suci Fitria Safira<sup>1</sup>, Imahda Khoiri Furqon<sup>2</sup>**

**ORCID: 0009-0009-9886-7887**

[suci.fitria.safira@mhs.uingusdur.ac.id](mailto:suci.fitria.safira@mhs.uingusdur.ac.id)<sup>1</sup>, [imahda.khoiri.furqon@uingusdur.ac.id](mailto:imahda.khoiri.furqon@uingusdur.ac.id)<sup>2</sup>

**State Islamic University K.H. Abdurrahman Wahid Pekalongan, Faculty of Economics and Islamic  
Business, Sharia Banking, Pekalongan, Indonesia**

**Özet**

PPnBM (lüks satış vergisi) lüks malların satışı için geçerli olan bir vergi düzenlemesidir Endonezya'da. PPnBM'nin amacı devlet gelirlerini artırmak ve Endonezya vergi sistemi aracılığıyla servet dağılımı. PPnBM aşağıdakilere uygulanır otomobil, motosiklet, mücevher, elektronik ve yüksek satış değerine sahip diğer mallar gibi lüks olarak kabul edilen mallar. Bu araştırma şu temelde yapılmıştır lüks Mallar Katma Değer Vergisi (PPnBM) uygulamasının arka planı. Bu çalışmanın amacı, lüks mallar satış vergisi uygulamasının (PPnBM) kamu tüketiminin satın alma gücünü etkilemektedir. Bu araştırma kamu tüketiminin satın alma gücü seviyesinin değişip değişmediğini tartışmak artmış veya azalmıştır, çünkü PPnBM'nin derlenme amacı adalet ilkesini korumaktır. Bu çalışmada kullanılan yaklaşım betimseldir literatür çalışması yöntemiyle, yani aşağıdaki kaynaklardan referanslar arayarak nitel Çalışılan teorik çerçeve ile ilgili kaynaklar.

**Anahtar Kelimeler: Vergi; STLG; Satın Alma Gücü; Kamu Tüketimi**

## AUDIT INDEPENDENCE AND FINANCIAL REPORTING QUALITY OF LISTED MANUFACTURING COMPANIES IN NIGERIA

By

**Balogun, Sherif Babajide & Fatogun, Olukunle Ibukun**

**Department of Accountancy, The Federal Polytechnic, Ilaro, Ogun State**

**Corresponding E-mail:- babajide.balogun@federalpolyilaro.edu.ng**

### Abstract

The study evaluated the effect of audit independence on Nigerian listed industrial businesses' financial reporting quality. In particular, the study used audit tenure, audit fees, and the size of the auditor's clientele as proxies for audit independence, and it used discretionary accruals to gauge the calibre of financial reporting by Nigerian listed manufacturing companies. Ex-post facto research design was employed by the study. Also, the study adopted secondary source of data which was collected from the Annual Report and Accounts of the ten (10) selected manufacturing companies listed on the Nigerian Stock Exchange, covering a period of 10 years (2012 to 2021). The study adopts descriptive statistics, correlation and regression analysis to analyze the data collected with the use of E-view version 9. At 5% significant level, the findings revealed that audit tenure has no significant effect on discretionary accruals of; audit fees affect discretionary accruals and; auditor's client size has no significant influence on discretionary accruals of listed manufacturing companies in Nigeria. The study comes to the following conclusions: the length of the audit does not guarantee the quality of financial reporting; the quantity of the audit client has no bearing on the quality of financial reporting on the chosen Nigerian manufacturing companies; and the higher the audit fee, the higher the quality of financial reporting. The research made several recommendations, one of which was to monitor audit fees since large audit fees from an audit client can lead to economic bonding, which compromises the independence of the auditor and the quality of the audit.

**Key Words:** Accrual, Audit, Audit Client's Size, Audit Fee, Audit Independence, Audit Tenure and Financial Reporting.



## 1. INTRODUCTION

The requirement for audit services as a monitoring tool is a reflection of the conflict of interest that exists in modern organisations between owners and agents (Nozarpour, 2014). In order to safeguard shareholders from unethical and managerially motivated behaviour and to enhance the informational value of accounting figures shown in financial statements, an external audit is required. The Companies and Allied Matters Act (CAMA) Cap C20 Laws of the Federal Republic of Nigeria is the main legislative framework for corporate governance in Nigeria, according to (Okike & Adegbite, 2012).

It is indisputable that an independent auditor is a prerequisite for a high-caliber audit. Over the past ten years, there has been a rise in interest in research on auditor independence. Corporate managers, business owners, and investors have all been on edge to make sure that correct accounting and management standards are followed. The numerous corporate scandals and failures that have rocked the world of business are not unrelated to this. Since Nigeria is not immune to the need to comply with established norms and processes, it is imperative to ascertain the factors that impact the reliability of financial reporting. The study's attempt to assess how audit independence affects the standard of financial reporting by Nigerian listed industrial businesses is informed by this background.

Numerous studies have examined the relationship between audit independence and the quality of financial reporting. Olowookere and Olladejo (2014), Okolie (2014), Odia (2015), Abdul-Malik et al (2016), Babatoluet al. (2016), Mitrendu and Siddhartha (2016), Abdul-Rahman et al (2017), Zayolet al. (2017), Aliu, Okpanachi, and Mohammed (2018), Asthana et al., (2018), Sunday (2019), Olaoye, Agugom, Safiriyu and Abiola (2019), Stella and Uchenna (2019), Jacinta and Darlington (2020) are just a few of the research studies that were conducted both in Nigeria and abroad. The outcomes of these investigations, however, were mixed. There was no influence at all observed in a small number of studies, but there were positive, negative, and neutral effects on the quality of financial reporting related to audit independence. Moreover, audit fee, company size, and tenure were the main factors used in earlier studies to evaluate the auditor's independence. So, instead of using the audit company size that was frequently utilised in previous studies, the research frequently uses the size of the auditor's client. Most of the research has yet to address how auditor independence affects the standard of financial reporting. The present study thus seeks to build on previous research by examining this stand-in for auditor independence. This study examines the effects of audit tenure, audit fee, and audit client size on the accuracy of financial reporting for manufacturing companies listed in Nigeria that are subject to external auditor independence.

This study's main goal is to evaluate how audit independence affects the quality of financial reporting for Nigerian listed industrial companies. The main objectives are to:

- i. analyse the impact of audit tenure on listed manufacturing businesses in Nigeria's discretionary accruals.
- ii. determine the impact of audit fees on listed industrial businesses' discretionary accruals in Nigeria
- iii. examine the extent to which the growth of the auditor's clientele affects the listed manufacturing companies in Nigeria's discretionary accruals.

## **2. LITERATURE REVIEW**

### **2.1 Conceptual Review**

#### **2.1.1 Audit Independence**

The idea of auditor independence implies the capacity to keep an objective and detached perspective throughout the auditing process. DeAngelo (1981) defined auditor independence as an auditor's capacity to make judgments, communicate the audit's findings, and keep a balanced mental assertiveness. Anytime an auditor's independence is questioned, there is a chance that they will be perceived as biased. It is inferred that the auditor will be viewed as lacking the objectivity required to reveal any discovered violations.

#### **2.1.2 Audit Tenure**

Audit tenure refers to the duration of time that has passed since the auditor initiated communication with a client. There are two schools of thinking about how auditor tenure affects audit quality (Enofe, Mgbame, Okunega, & Ediae, 2013). The notion that an auditor's longer tenure increases competence because choices are based on significant client knowledge that the auditor has accumulated over time is subject to two competing viewpoints, according to (Knechel & Vanstraelen, 2007). According to the first perspective, an auditor's greater familiarity with a client increases the likelihood that they will act in the best interests of management. Adeyemi and Okpala (2011) suggest that sustained connections between auditors and clients may result in an alignment of interests, hence decreasing the likelihood of the auditor acting in a truly independent capacity.

#### **2.1.3 Audit Fees**

The audit fee is the sum that an auditor bills for finishing an audit job. That is, the amount the auditor requests in order to conduct an evaluation of the fairness and correctness of the financial statements. The audit fee is the sum of money granted to the auditors to cover the risk for litigation as well as the costs of the work completed by the public editors. A public accountant's charge to a client for financial audit services is called an audit fee (Suharli & Nurlaelah, 2008). This term supports the opinion held by the Securities and Exchange Commission.

### 2.1.4 Auditor's Client Size

Auditors charge a fee for their audit services. It is claimed that certain auditors' clients are more important economically than others. The audit company's economically significant clients are those having a higher portfolio weight on the auditor's client list. More general ramifications include the potential for an external auditor's independence to be jeopardised if they yield to pressure from management of larger clients.

### 2.1.5 Financial Reporting Quality

Igben (1999), cited in Olagunju (2011), states that financial reports are a formal record of business activities that provide users with an overview of the financial performance and position of organisations to assist them in making better financial decisions. Financial reports give light on an organization's resource utilisation, as well as the allegations made against it and its owners. They also reveal the outcomes of transactions that changed the organization's resource allocation and the allegations made against it (Glautier & Underdown, 2001).

### 2.1.6 Measurements of Financial Reporting Quality

Dechow, Ge, and Schrand (2010) divided measures of financial reporting quality into three primary categories: investor reaction to earnings, earnings characteristics, and external indicators of earnings misstatements. The notion that a discrepancy between earnings and an objective (minimal profits, for instance) indicates earnings management falls under the first category. It also includes other items such as accruals and earning persistence, earnings smoothness, asymmetric timeliness, and timely loss recognition. Undertakings falling under the second group include substituting the earnings response coefficient (ERC) or the R square from the earnings-returns model for earnings quality. The third category includes statements, accounting and auditing enforcement releases (AAERs), and internal control procedural violations reported under the Sarbanes Oxley Act.

### 2.1.7 Discretionary Accrual

Discretionary accrual is defined by Arens and Beasley (2014) as the amount of an asset or liability that is recorded in the system but is not required to be realized until it is resolved.

The Jones (1991) model-based financial reporting quality metric is the first one looked at. The main goal of this model is to determine the amount of total accruals that may be utilized for discretion, which is subsequently used as a gauge of earnings management. Jones (1991) utilized the following expectations model for total accruals to adjust for changes in the firm's economic situation and divide it into its discretionary and non-discretionary components:

$$TA_{it} / A_{it-1} = \alpha_i \{1/A_{it-1}\} + \beta_{1i} \{\Delta REV / A_{it-1}\} + \beta_{2i} \{PPE_{it} / A_{it-1}\} + \varepsilon_{it}$$

Where:

$TA_{it}$  = Total accruals in year t for firm i;

$A_{it-1}$  = Total assets in year t-1 for firm i;

$\Delta REV_{it}$  = Revenues in year t less revenues in year t-1 form firm i;

$PPE_{it}$  = Gross property, plant and equipment in year t for firm i;

$\varepsilon_{it}$  = Error term in year t for firm i.

The aforementioned model incorporated adjustments for changes in gross property, plant, and equipment as well as changes in revenues to account for variations in non-discretionary accruals brought on by shifting circumstances. Changes in sales were taken into account since it was seen to be an objective indicator of the company's performance prior to management manipulation, while gross property, plant, and equipment was taken into account to account for non-discretionary depreciation costs (Jones 1991).

Discretionary Accruals (DACC) are the standard measure of financial reporting quality used in this research. According to Dechow, Sloan & Sweeney (1995), DeAngelo (1986), and Jones (1995), DACC is a better method for assessing the quality of audits and the degree of earnings management. The quality of financial reporting is lowered by excessive income smoothing and earnings management, according to the DACC perspective. The inference is that increasing DACC widens the gap between the financial statements' depicted outcomes and the actual situation (financial performance).

## 2.2 Theoretical Review

### 2.2.1 Agency theory

According to Jensen and Meckling's (1976) definition, an instance of agency theory is when a principal designates a third party—referred to as the agent—to do an action on their behalf. Giving the agent some degree of decision-making authority is implied by this. Jensen and Meckling (1976) theorise that the inability of the shareholders to monitor the performance and actions of the management is the cause of these disparities. Leuz et al. (2003) also claim that the managers' pursuit of self-interest increases the costs to the company of contract formation, losses from decisions the agents make, and the costs of keeping an eye on and overseeing the behaviour of the agents. As a result, the business's revenues finally reflect the effects of this kind of behaviour. The application of earnings management strategies could indicate the presence of an agency problem. In modern businesses, ownership and management are usually kept apart because shareholders are rarely involved in day-to-day operations. And this is the basis for the agency problem (Habbash, 2010). It is necessary to take steps to ensure audit quality by utilising external auditors, an unbiased third party, in order to reduce these agency difficulties. The objective evaluation of the company's or firm's financial statements by external

auditors is meant to reduce the possibility of earnings manipulation. This research endeavour is motivated by this agency concept.

### **2.2.2 Stakeholder Theory**

According to Clarke (2004), the stakeholder theory characterises the corporation as a collection of bilateral agreements between the enterprise and its many stakeholders. Unlike agency theory, which restricts a firm's stakeholders to just shareholders and managers, stakeholder theory views a company as having more than two stakeholders (e.g., workers). Even while shareholders fund management, they depend on employees to achieve the lucrative objectives of the company. Businesses are required to comply by both legal and informal regulations, and examples of equally important external stakeholders are customers, suppliers, and the community. The stakeholder theory recognises the connection of the business and society. Because of this, the business serves a broader social purpose than that which the agency theory proposes, which restricts its responsibilities to managers and shareholders (Kiel & Nicholson, 2003).

Although the stakeholder theory has more theoretical and practical appeal than agency theory and stewardship theory, it is heavily criticised for its inability to treat all stakeholders equally and to reconcile their divergent demands. As a result, the hypothesis is unable to adequately explain the relationship between audit quality and profits management techniques (Gabriel, 2017).

### **2.3 Empirical Review**

Numerous outstanding empirical research, carried out in both developed and developing nations, have examined the effect of audit independence on the quality of financial reporting. A selection of these studies is provided below.

Asthana, Khurana, and Raman (2018) look into US audit quality as well as the competition amongst the Big 4 auditors for fees. They illustrate how fees competitions are viewed as an essential instrument for raising audit quality in the increasingly concentrated US audit business. Knechel, Krishna, Pevner, Shefchik, and Velury (2018) look into the effects of widespread trust and community cooperation on audit fees in a number of different countries, all in vain.

They demonstrate that countries with higher levels of community cooperation and trust are more likely to request more auditing services and spend more money on comprehensive audits. They argue that countries with higher levels of trust and community collaboration pay higher audit costs because they can demand higher levels of assurance. This shows that since they can afford more expensive audit services, countries with higher levels of public cooperation or widespread trust are ready to pay higher audit expenses.

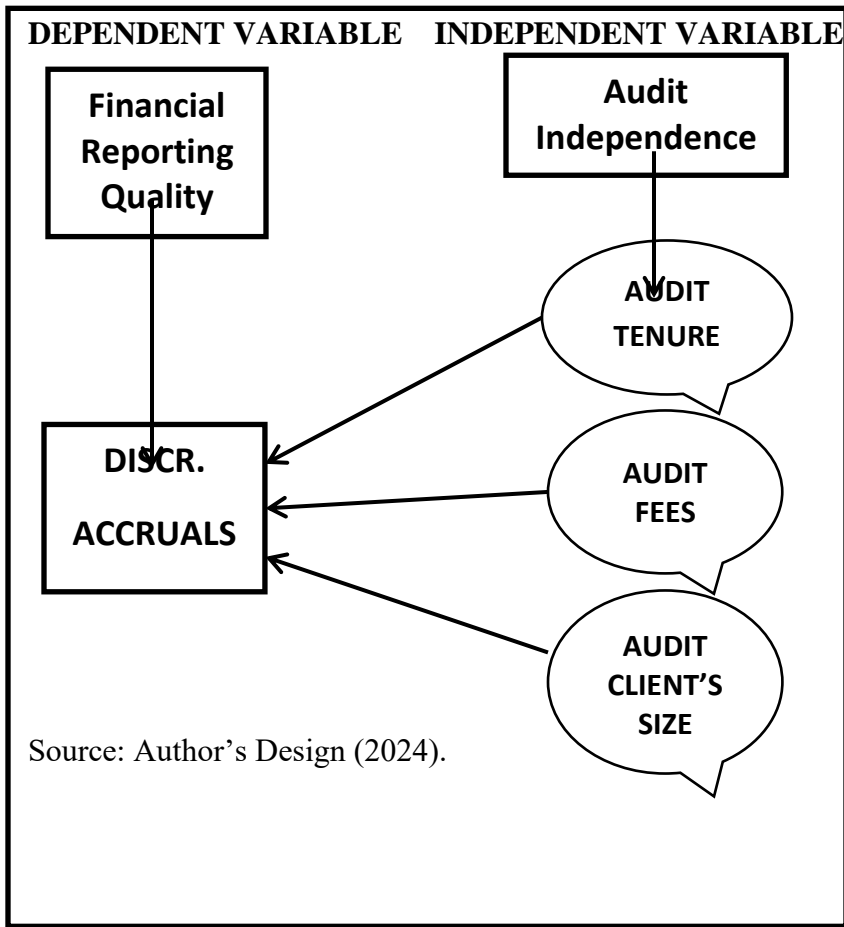
Adeniyi and Mieseigha (2015) examined the relationship between the length of an audit—a proxy for independence—and the calibre of financial reporting in Nigeria. They used a fictitious number, 1, for firms who use any of the Big 4 auditors, and 0 for those that don't when it comes to audit quality. Tenure at a sampling firm was determined by the number of years an auditor worked there. If three or more, the answer is a 1; if not, a 0. Regression analysis was employed. The study's findings demonstrated an adverse correlation between audit quality and tenure. This could spark a conversation on whether it makes sense to change auditors later on to enhance the audit's quality. The study found a negative correlation between audit quality and tenure as well as other variables including board size, independence, and director ownership—all of which serve as stand-ins for corporate governance.

Adeyemi and Okpala (2015) assert that an auditor's independence may be lost as a result of their term with an audit firm. An alignment of the auditor's and the client's interests may arise from a long-term audit-client relationship, raising the possibility that the auditor may work in a truly independent manner. The study concluded that audit firm rotation does not necessarily lead to an improvement in audit independence in Nigeria. This may be due to the fact that auditors have similar cultural biases and orientations together with a similar professional perspective.

Additionally, a study conducted recently by Abdul-Rahman, Benjamin, and Olayinka (2017) examined the relationship between audit fees and the calibre of financial reporting in Nigeria and discovered a positive and significant correlation between the two. Kabiru and Abdullahi (2017) carried out an empirical investigation evaluating the quality of audited financial statements of Nigerian firms using primary and secondary data. They selected five companies from the population, all of which are listed on Nigerian stock exchanges. They found that the independence of the auditor significantly improves the quality of audited financial statements of Nigerian enterprises. Adherence to auditing rules has a favourable and considerable impact on the quality of the audited financial statements of Nigerian money deposit institutions. Material misrepresentation has a significant negative influence on the audited financial accounts of Nigerian money deposit institutions. They also found that if more independent auditors conducted a second audit of the financial accounts of Nigerian money deposit banks, the results and conclusions would be the same.

## 2.4 Conceptual Model

Figure 1



## 3. METHODOLOGY

This study employed an ex-post facto research strategy since its objective was to collect essential data on the state of the specific phenomenon following a naturally occurring therapy without altering the external environment. According to the NSE's Annual Reports and Accounts as of December 31, 2022, the 114 manufacturing companies that are listed on the Nigerian Stock Exchange (NSE) make up the study's population. The study's sample size consisted of ten (10) manufacturing companies that are listed on the Nigerian Stock Exchange. The sample size that was chosen to represent the entire population was determined using the judgmental sampling approach. The selected companies are listed in the following table:



S/N	Selected Listed companies in Nigeria
1.	Nestle Nig. Plc.
2.	Nigerian Breweries Plc.
3.	Dangote Cement Plc.
4.	Berger Paints Plc.
5.	Beta Glass Plc.
6.	Lafarge Plc.
7.	Premier Paint Plc.
8.	UAC Plc.
9.	Austin LAZ Nig. Plc.
10.	Meyer Plc.

Source: Author's Compilation (2024)

The primary source of data used in this investigation was the secondary source. Quantitative data are used in this investigation. The data was collected from the publicly available annual financial reports and accounts of the selected consumer products companies over a five-year period, from 2016 to 2020. The yearly reports and accounts are sourced from an online database and the Nigerian Stock Exchange Fact Book.

A quantitative analysis was employed in the study. Quantitative analysis deals with numerical data, or numbers, according to Oates (2009). In the quantitative investigation, both descriptive and inferential statistical techniques were applied. The descriptive statistics that are used to examine the statistical characteristics of the study's variables include mean, maximum, minimum, and standard deviation. On the other hand, Ordinary Least Square (OLS) regression analysis was used in an inferential statistics method to analyse the model chosen for the study and the hypotheses generated during the investigation.

The following is the estimate of the association using ordinary least square (OLS) regression:

$$DA = \alpha + \beta_1 AT + \beta_2 AF + \beta_3 ACS + \mu$$

Where;

D.A = Discretionary Accruals (Represented by changes in working capital)

A.T = Audit Tenure

A.F = Audit Fees

ACS = Audit Client's Size

$\mu$  = Error term.

## 4. RESULTS

### 4.1 Presentation of Results

**Table 1** Descriptive Results

	DA	AT	AF	ACS
Mean	29.43378	7.848485	45548.64	2.071008
Median	0.078394	8.000000	23000.00	27171069
Maximum	2871.064	18.00000	420000.0	2.581009
Minimum	-3.687716	1.000000	176.0000	203973.0
Std. Dev.	288.5198	4.708576	76925.34	4.671008
Skewness	9.797340	0.146871	3.215924	3.300524
Kurtosis	96.99542	1.899194	13.57936	13.82805
Jarque-Bera	38028.74	5.354489	632.3272	663.3850
Probability	0.000000	0.068752	0.000000	0.000000
Sum	2913.944	777.0000	4509315.	2.05E+10
Sum Sq. Dev.	8157881.	2172.727	5.80E+11	2.14E+19
Observations	99	99	99	99

**Source: Computation from E-View 9 Output, 2024.**

The descriptive statistics of the variables is provided in table 1 above. From the table, the averages of the variables are 29.43378, 7.848485, 45548.64 and 2.071008 for DA, AT, AF and ACS respectively. The maximum values of the variables are 2871.064, 18.00000, 420000.0 and 2.581009 respectively. On the other hand, the minimum values of the variables are revealed as 3.687716, 1.000000, 176.0000 and 203973.0 respectively. However, the study concluded that all the variables are not normally distributed since their corresponding probability values from the Jarque-Bera test are less than 0.05.

**Table 2 Correlation Results**

Correlation t-Statistic Probability	DA	AT	AF	ACS
DA	1.000000 ----- -----			
AT	0.067223 0.663570 0.5085	1.000000 ----- -----		
AF	0.342211 3.586952 0.0005	0.324383 3.377435 0.0011	1.000000 ----- -----	
ACS	0.275463 2.822183 0.0058	0.295271 3.043792 0.0030	0.952946 30.96080 0.0000	1.000000 ----- -----

**Source: Computation from E-View 9 Output, 2024.**

The correlation results between the variables (DA, AT, AF, and ACS) are shown in table 2. The correlation coefficients of 0.067223, 0.342211, and 0.275463, respectively, show that all of the independent variables have a weak positive association with the dependent variable (DA).

**Table 3: Hausman Test**

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.505725	3	0.9176

Source: Computation from E-View 9 Output, 2024.

Given that the p-value in Table 3 is less than the 0.05 significant level, it can be considered statistically insignificant. Regression analysis would thus employ the fixed effect model.

**Table 4: Regression Analysis**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AT	-0.849251	8.668177	-0.097973	0.9222
AF	0.003274	0.001339	2.444940	0.0165
ACS	-3.521207	2.08E-07	-1.687274	0.0952
C	-40.07600	79.05252	-0.506954	0.6135
R-squared	0.167586	Mean dependent var	29.43378	
Adjusted R-squared	0.051435	S.D. dependent var	288.5198	
S.E. of regression	281.0019	Akaike info criterion	14.23645	
Sum squared resid	6790737.	Schwarz criterion	14.57723	
Log likelihood	-691.7044	Hannan-Quinn criter.	14.37433	
F-statistic	1.442829	Durbin-Watson stat	2.130983	
Prob(F-statistic)	0.162603			

Source: Computation from E-View 9 Output, 2024.

The traditional OLS formula is used to get the least squares regression coefficients from table 4 above. The signals of the coefficients should line up with economic theory, predictions, empirical data, or gut feeling. The "Coefficient" column displays the estimated coefficients. The coefficients of least squares regression are computed using the standard OLS formula. For the multiple linear models under consideration here, the coefficient quantifies the marginal contribution of the independent variable to the dependent variable, holding all other variables constant. The other coefficients are understood to represent the slope of the relationship between the appropriate independent variable and the dependent variable, assuming that all other variables stay constant. The aforementioned model can be represented in this way:

$$DA = -40.07600 - 0.849251AT + 0.003274AF - 3.521207ACS + \mu$$

It is evident from the preceding equation that AF has a positive effect on the dependent variable (DA), but AT and ACS have a negative effect on it. This indicates that the DA of the chosen enterprises would decrease by 0.849251 and 3.521207, respectively, if AT and ACS increased by one unit each. Conversely, a unit increase in AF would result in a 0.003274 rise in DA. Additionally, the independent variables' t-test results were displayed as follows: -0.097973, 2.444940, and 1.687274, respectively. All of these values—aside from AF, which is more than two—are below the t-tab of two. They are displayed as having matching probability values (p-values) of 0.9222, 0.0165, and 0.0952, in that order. Given that the value is higher than the 0.05 level of significance, the likelihood values for AT and ACS can be considered statistically insignificant. Nonetheless, given that the value is less than the 0.05 significant level, the p-values for AF can be considered statistically significant.

Furthermore, the R-squared statistic, which is 0.167586, indicates that only 16.76% of the variance in DA can be attributed to the independent factors, with the remainder being accounted for by variables not used in the study. Given that the figure derived is bigger than the 5% significant level, the F-Statistic of 1.442829 with a probability value of 0.162603 suggests that the model derived is statistically insignificant. Nonetheless, the Durbin-Watson statistic value of 2.130983 was displayed; given that this value is more than 1.5, it can be regarded as the absence of auto-correlation. This suggests that all of the variables are in good condition.

### Test of Hypotheses

**H<sub>01</sub>:** Audit tenure has no significant effect on discretionary accruals of listed manufacturing companies in Nigeria

To provide a suitable perspective on the above-mentioned study premise, the regression table suffices. The t-cal for audit tenure (AT) is 0.097973 in the regression table, and the associated probability value is 0.9222. This result was deemed statistically insignificant because it exceeds the 5% significant level. Because of this, the

analysis concurs with the null hypothesis put forth above and acknowledges that audit tenure has no appreciable impact on the discretionary accruals of Nigerian listed manufacturing businesses.

**H<sub>02</sub>:** Audit fees do not affect discretionary accruals of listed manufacturing companies in Nigeria

Additionally, the regression table's t-cal showed that audit fees (AF) had a value of 2.444940 and a corresponding probability value of 0.0165, both of which were considered statistically significant at the 5% significant level. As a result, the study refutes the second null hypothesis, which was put forward above, and affirms that audit fees have an impact on the discretionary accruals of Nigerian listed manufacturing companies.

**H<sub>03</sub>:** Auditor's client size has no significant influence on discretionary accruals of listed manufacturing companies in Nigeria

Given that the p-value is higher than the 5% significant level, the regression table indicates that the t-cal for the auditor's client size (ACS) is 1.687274 with a probability value of 0.0952. This data was deemed statistically unimportant. Due to this, the study is unable to refute the third null hypothesis, which states that the size of the auditor's clientele has no appreciable impact on the discretionary accruals of Nigerian listed manufacturing companies.

#### 4.2 Discussion of Results

The study evaluated how audit independence affected the standard of financial reporting of Nigerian-listed industrial companies. The specific audit proxies that were used were Audit Tenure (AT), Audit Fee (AF), and Auditor's Client Size (ACS). Discretionary accruals were used to assess the dependent variable, which was the calibre of financial reporting. As will be explained below, certain empirical research on the topic offer a variety of findings, while other discoveries are connected to the study's conclusions.

The study supports the first null hypothesis, which states that audit tenure has no discernible impact on the discretionary accruals of listed industrial organisations in Nigeria, at the 5% level of statistical significance. The current result is in line with studies by Al-Dhamariet (2018), Reynolds and Francis (2016), Wilson, McNellis & Latham (2018), Al-Kukeng and Iortule (2017), Asthana, Khurana and Raman (2018), Almeshal (2018), Adeniyi and Mieseigha (2015), Blankley, Hurtt, and MacGregor (2017).

The study's findings also show how audit fees affect Nigerian listed industrial companies' discretionary accruals. This conclusion is at odds with studies by Okolie (2017), Knechel, Krishna, Pevner, Shefchik and Velury (2018), Wilson, McNellis, & Latham (2018), Mitrendu and Siddhartha (2016), Reynolds and Francis (2016), Al-Dhamariet (2018), Blankley, Hurtt, and MacGregor (2017), Ilaboya and Ohiokha (2017), Knechel, Krishna, Pevner, Shefchik and Velury (2018), and Almeshal (2018).

The results also showed that listed manufacturing businesses in Nigeria's discretionary accruals are not significantly impacted by the auditor's client size. However, this is consistent with research done by Brooks, Cheng, and Reichelt (2015), Larcker and Richardson (2015), Litt, Sharma, Simpson and Tanyi (2016), Zayol, Kukueng, and Iortule (2017), Asthana, Khurana and Raman (2018), Knechel, Krishna, Pevner, Shefchik and Velury (2018), Wilson, McNellis, and Latham (2018), Mitrendu and Siddhartha (2016), Abdul-Rahman, Benjamin and Olayinka (2017), Ilaboya and Ohiokha (2017), and DiGabriele and Ojo (17).

## 5. CONCLUSION AND RECOMMENDATIONS

### 5.1 Conclusion

The study concludes as follows in light of the research results that evaluated the effect of audit independence on the caliber of financial reporting of listed manufacturing businesses in Nigeria:

In the regression table, the related probability value is 0.9222, and the t-cal for audit tenure (AT) is 0.097973. Because this result is more than the 5% significant criterion, it was considered statistically insignificant. Consequently, the study concludes that audit tenure is not considered a major or dependable indicator of the calibre of financial reporting for the industrial companies it selected.

Furthermore, the t-cal of the regression table revealed that audit fees (AF) had a probability value of 0.0165 and a value of 2.444940, both of which were deemed statistically significant at the 5% significant level. According to the study's findings, users of financial statements may rely on the audit fees incurred to predict the calibre of financial reporting for the selected Nigerian manufacturing companies.

The regression table shows that the t-cal for the auditor's client size (ACS) is 1.687274 with a probability value of 0.0952, with the p-value being higher than the 5% significant threshold. Statistics showed that this data was not significant. This leads the research to the conclusion that the size of the auditor's client cannot predict the financial reporting quality (as demonstrated by discretionary accruals) of the selected industrial businesses in Nigeria.

### 5.2 Recommendations

Thus, one of the most important audit quality criteria is audit independence with the maximum explanatory power in order to create high-quality financial reporting. Professional accountants must therefore conduct themselves independently during every audit work. This is necessary for credibility and excellent financial reporting.

Manufacturing organisations ought to rely on the audit fees paid to auditors as a guarantee of the quality of their audits, since these costs have a positive and significant influence on the quality of financial reporting. In order to ensure that no audit company has a client whose audit charge exceeds five percent of the total audit cost, the



Institute of Chartered Accountants of Nigeria's code of conduct for professional accountants recommends tracking audit fees. Economic bonding will result from an audit client's conspicuously high audit fees, jeopardising the audit's independence and quality.

According to the findings, the length of the audit has a negative impact on financial reporting quality and is statistically insignificant. As a result, industrial companies shouldn't rely too heavily on auditor tenure to ensure the quality of their financial reporting. Since the length of the audit and its quality are directly tied, the auditor-client relationship shouldn't run more than three years. Following that, the auditor might become more familiar with the client and be more likely to act in the management's best interests, which would reduce the quality and objectivity of the audit.

Manufacturing organisations in Nigeria ought to consistently select larger audit firms as they offer superior audit quality, greater prospects for superior profits, and reduced earnings manipulation.

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## IMPLEMENTATION OF CLOUD COMPUTING IN ENTERPRISE DATA STORAGE: BENEFITS, RISKS, AND SECURITY STRATEGIES

Hilya Hana Putri <sup>1</sup>, Izzati Rohmaniyah <sup>2</sup>, Nailly Taufiqoh <sup>3</sup>

UIN K.H. Abdurrahman Wahid Pekalongan

Email : [hilya.hana.putri@mhs.uingusdur.ac.id](mailto:hilya.hana.putri@mhs.uingusdur.ac.id) <sup>1</sup>, [izzati.rohmaniyah@mhs.uingusdur.ac.id](mailto:izzati.rohmaniyah@mhs.uingusdur.ac.id) <sup>2</sup>,  
[naily.taufiqoh@mhs.uingusdur.ac.id](mailto:naily.taufiqoh@mhs.uingusdur.ac.id) <sup>3</sup>

**ABSTRACT:** The research reveals that implementing cloud computing technology in enterprise data storage offers significant benefits, including operational efficiencies, flexible access from multiple locations, and reduced IT infrastructure costs that are often burdensome. These advantages allow companies to manage data in real-time and improve collaboration between teams and departments. However, cloud deployment also brings risks that must be carefully managed, such as potential data leaks, dependence on service providers, and increasingly complex cybersecurity threats. Data leaks can harm a company's reputation and lead to serious legal consequences. To address these challenges, companies need to implement a comprehensive security strategy, including data encryption, strict access management, and active network monitoring. In addition, regular security audits and selection of trusted service providers are essential to ensure adequate data protection. Further development potential includes enhancing security through innovative technologies and implementing best practices in data governance. With the right approach and effective mitigation measures, cloud computing can be optimally utilized, making it an effective solution for modern data storage needs and maintaining the security and integrity of corporate data.

**Keywords:** cloud computing, data storage, benefits, risks, strategies

## WOMAN BODY, SOCIETY AND CULTURE

**Kamal koohi**

**ORCID: 0000-0003-3840-6340**

**k.koohi@Tabrizu.ac.ir**

**Univercity of Tabriz, Faculty of Law and Social Sciences, Department of Social Sciences , instutite of Social Sciences and Founding member of the scientific pole of sociology of healthm Tabriz,**

### **Abstract**

In every society, the human body has a physical reality and a social reality. The shape, size, clothing and adornment of the human body are a means of communication and transmitting information to other members of society. The body is a culture and displays the basic issues within that culture. The society and culture attributed to it shape the bodies of its members, and in turn, bodies are not indifferent to the construction of its society and culture. Every society shapes the bodies of its members in accordance with its culture.

The growth of new technologies in nutrition, health and sports, along with the importance of the agency and extreme consumerism of the body, has made corporeality an important topic in contemporary social and cultural studies. The visualization of beauty standards and criteria in the modern consumer society has caused more attention to the body by different segments of society and its change and modification. This tendency, in turn, has prepared the ground for a problem called the "paradox of the value of health and the value of beauty". Many of today's body management behaviors, including; All kinds of cosmetic surgeries, the use of cosmetics and hygiene products for the face and appearance are known to be harmful to people's health. However, the tendency of people, especially women, to such behaviors has increased day by day due to false advertising in the mass media, and has even led to its spread among men, and has provided a new chapter in the beauty industry as "men's beauty".

Women can be divided into several groups according to the reasons and goals of managing their bodies. The first group of women see the goal of body management as social pressure to adapt and conform to the ideals and standards of beauty of society. These pressures are imposed by society, domestic and foreign media, upper-class women and the reference group so that they harmonize their bodies in line with the standards and ideals of beauty existing in society. The second group considers the goal of monetizing their bodies to gain fame, status and social approval, physical attractiveness and acquiring beauty, attracting the attention of others, increasing the chance of marriage and self-gratification. The third group mentioned acquiring a new identity and transmitting a message in the process of symbolic interaction, creating a distinction between themselves and others, maintaining youth, correcting and restoring body image and body satisfaction, and finally creating vitality and joy as the main goals of managing their own bodies.

**Key Words:** Body, Society, Culture, Body Management, Change and Modification Body

## ACCOUNTING, DIGITIZATION AND CONTROL

**Assoc. Prof. Dr. Plamen Iliev**

**New Bulgarian University**

**Department of Economics**

[kaviplas@abv.bg](mailto:kaviplas@abv.bg), [pkiliev@nbu.bg](mailto:pkiliev@nbu.bg)

**Abstract:** Digitalization as a concept was first used 70 years ago, in 1953, and today "digitalization" /digitization/ means the conversion of analog information in any form /text, photographs, voice, etc./ into digital /digital/ form through electronic devices (scanners, cameras, etc.), so that the information can be processed, stored and transmitted through digital circuits, equipment and networks. We can now improve and accelerate business models, processes and all types of organizational activities with digital transformation in order to use the opportunities offered by various developed and new technologies, or digital transformation represents a changing mindset. We can no longer say how we did it in the past. It is about how we need to do it in order to survive and develop in the future.

Digitalization and digital transformation bring significant changes in all spheres, regardless of their size and the economic area in which they operate. In this regard, speaking of digitalization of control, perhaps first of all we should also consider the possibilities for digitalization of accounting, as an object for verification in control and audit, i.e. the digitalization of accounting should precede this process in control in time. Accounting should not remain aloof from these fundamental changes, in fact in many aspects it is ahead of control.

Digitalization and digital transformation are an essential part of the processes taking place in it. The main activity of accounting is the collection of primary data from the various information systems in the company, their processing and transformation into new information that did not exist until now. From the primary documents issued by the various systems, secondary documents are prepared in accounting, the information of which serves managers to make effective management decisions. Considering the digitalization of control, we must know that each of the existing controls, including financial control, internal audit, external audit, considered as evaluation control /Court of Accounts and Independent Auditors/, Tax control, etc. are facing numerous challenges due to the digitalization of industry and the economy. Generally speaking, control in all its aspects must also be digitalized, and the sooner the better. Otherwise, there will be a lag behind the overall digitalization process and its effectiveness will decrease. Even in some cases, the digitalized control or audit must outpace the digitalization processes in society and the economy. In this regard, a number of accounting

and control processes have been digitized in recent years, considering the available accounting programs, the issuance of electronic invoices, electronic signature, remote accounting, the submission of all types of declarations electronically with an electronic signature to the National Revenue Agency, reports in the Commercial Register and many others.

In recent years, a strong impetus in the digitalization of accounting has been given by the so-called digital accounting, or paperless accounting, in which the client scans or photographs the primary documents/invoices and uploads them to a cloud-cloud platform, which transfers them to an accounting software program.

The accountant only checks the information received and validates it, which saves a lot of time for both parties. Of course, digitalization, along with its many positive aspects, also leads to quite a few negatives, one of which is the still poor protection of accounting information in this case from hacker attacks.

**Keywords:** digitization, control, accounting, audit, taxes

## THE ROLE OF STEP AEROBICS IN ENHANCING PHYSICAL FITNESS AND PROMOTING HEALTHY LIFESTYLES ACROSS AGE GROUPS”.

**Dr. Alketa Caushi,**  
**University, Sports University of Tirana,**  
**E-mail: [acaushi@ust.edu.al](mailto:acaushi@ust.edu.al)**

### **Abstract**

This study explores the physical and physiological changes achieved through aerobic exercise, with a particular focus on Step Aerobics as a contemporary fitness activity suitable for all age groups. The primary objective is to evaluate the effectiveness of structured Step Aerobics sessions in improving physical performance and promoting a healthy lifestyle. Key goals include understanding the benefits of Step Aerobics, designing age-appropriate exercise programs, and encouraging future instructors to adopt fitness-based strategies for public health improvement.

The research is rooted in a comprehensive analysis of historical and current trends in aerobic fitness, emphasizing its growing relevance in modern sedentary lifestyles. Starting from Dr. Kenneth Cooper's 1968 introduction of aerobic exercises to Jackie Sorensen's evolution of aerobic dance in the 1970s, this study highlights the development and diversification of aerobic activities, including fitness formats like Step Aerobics, Zumba, and Dance Aerobics.

In Albania, aerobic fitness emerged in the 1990s and gained popularity through events such as gymnastic demonstrations and competitive championships. Today, it is a vital component of fitness centers nationwide. Step Aerobics, classified under general and sports aerobics, is recognized for its diverse applications and structured sessions tailored to individual abilities.

The methodology included experimental sessions with female participants aged 20–45. Parameters such as flexibility, strength, and coordination were measured using standardized tests and analyzed statistically to assess the impact of Step Aerobics on physical fitness. Results showed significant improvements in physiological and motor capabilities, including cardiovascular endurance (VO<sub>2</sub> max), muscle toning, and emotional well-being. Participants experienced reduced heart rates and energy expenditure for the same workloads, reflecting enhanced aerobic thresholds.

In conclusion, the findings emphasize the potential of Step Aerobics as an inclusive, effective tool for improving fitness and well-being. The study advocates for widespread adoption of structured aerobic sessions in educational and recreational settings to promote a healthier and more active society..

**Keywords:** Step aerobic, fitness, program, Vo<sub>2</sub> max, flexibility.



**Introduction** .Physical activity is a cornerstone of a healthy lifestyle, (1)offering benefits to physical, mental, and physiological well-being.(2,3) The evolution of modern technologies has resulted in sedentary lifestyles, heightening the risk of numerous health issues.(4,5.6) Step Aerobics, introduced by Dr. Kenneth Cooper in 1968 and further developed by Jackie Sorensen in the 1970s, combines rhythmic exercises with music, making it an engaging form of fitness. (7)This paper delves into the effects of Step Aerobics on health, its history, classifications, and how it serves as a solution to contemporary sedentary challenges.(8.9) **Objectives The study aims to:**

- 1 Establish a contemporary concept of Step Aerobics as a universal activity.
- 2 Highlight the values and benefits of Step Aerobics for various age groups.
- 3 Develop session models tailored to age and abilities.
- 4 Encourage future educators to integrate aerobic activities into healthy lifestyle programs

### **Literature Review**

The integration of aerobic exercises with music enhances coordination, rhythm, and enjoyment.(10) Research indicates that aerobic activities significantly improve VO2 max levels, reduce cholesterol, and combat lifestyle diseases such as diabetes and obesity(11). In Albania, aerobics gained traction post-1990, evolving from gymnastic exhibitions to competitive and recreational fitness activities. This history underscores the potential of aerobics to transform public health landscapes.

### **Methodology**

**Study Design** The study utilized an experimental design with voluntary participation from women aged 20 to 45 years. Participants were divided into two groups, undergoing a structured 3-month aerobic training program.

### **Data Collection**

Metrics assessed included:

- 1 Flexibility: Trunk bending distances were measured.
- 2 Strength: Abdominal and arm exercises evaluated muscle endurance.
- 3 Coordination: Participants performed basic and complex step routines under rhythmic conditions.

### **Data Analysis in Context**

These results align with previous studies that emphasize the benefits of aerobic exercises:

Cooper (1968)\*\* noted that aerobic activities improve cardiovascular capacity.

Snow-Harter and Marcus (1991)(12) highlighted the positive impact of exercises on muscle and bone health.

## Regression Analysis Results

The regression analysis aimed to assess whether participation in step-aerobics (experimental group) significantly explains improvements in measured outcomes (dependent variables).

- **R-squared:** 0.013, indicating that only **1.3%** of the variance in the dependent variables is explained by group membership.
- **p-value for Group Coefficient (x1):** 0.757, which is **not statistically significant**.
- **Intercept (constant):** 38.4, representing the baseline mean value.

## Interpretation:

The regression analysis does not show a statistically significant effect of group membership (experimental vs. control) on the combined outcome metrics. This result likely arises from the limited dataset provided, as robust regression models require multiple observations for each variable.

## Tools and Environment

Training sessions were conducted in fully equipped studios with wooden flooring to prevent injuries. Music systems facilitated exercises, ensuring alignment of tempo and intensity with session goals.

## Results and Discussion

**Physical Improvements** Participants exhibited marked improvements in flexibility, strength, and coordination. Graphical data revealed enhanced endurance and reduced heart rate during exercises, suggesting better cardiovascular efficiency.

**Physiological Benefits** Participants experienced reduced cholesterol levels and improved respiratory function. Mental health benefits included alleviation of stress, anxiety, and depression, fostering self-confidence and overall satisfaction.

**Practical Application** Step Aerobics exercises were divided into:

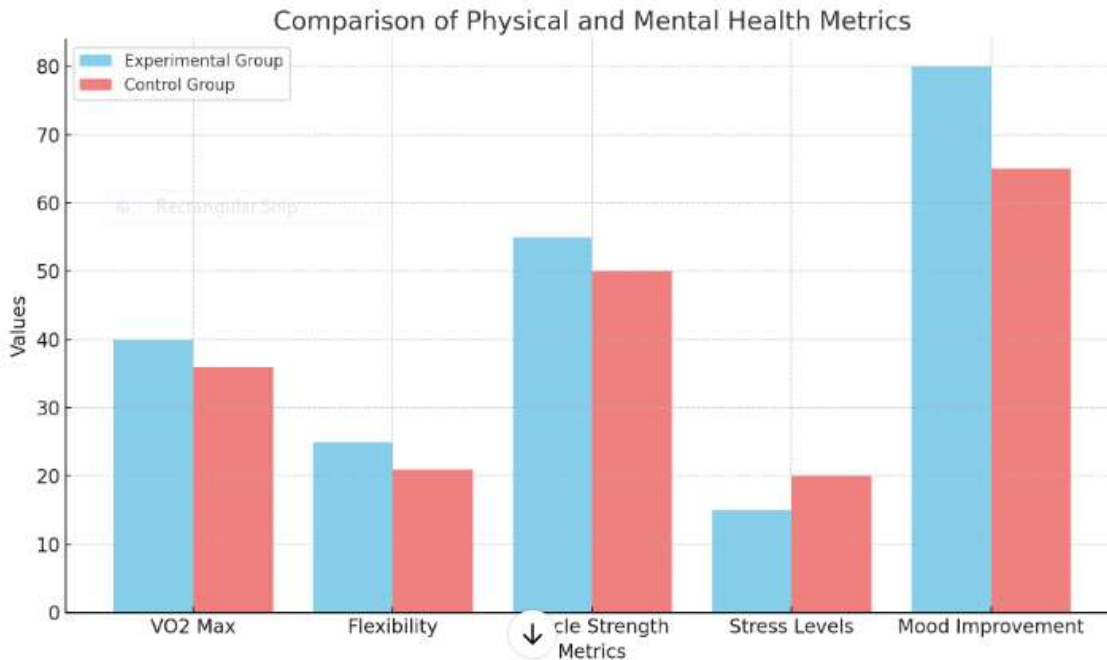
Basic Steps: Marching, Step Touch, and V Step.

Advanced Moves: Grapevine, Squats, and Knee Ups.

Program Variants: Low-impact, high-impact, combined, and circuit aerobics tailored to participant needs. (13)

Extended Data Table

Metric	Experimental Group (Mean)	Control Group (Mean)	p-value
VO2 Max	40	36	0.01
Flexibility (Sit-and-Reach)	25	21	0.02
Muscle Strength (Isometric)	55	50	0.03
Stress Levels	15	20	0.005
Mood Improvement	80	65	0.01



### Extended Discussion on the Study Results

The experimental study on the impact of step-aerobics in improving physical performance and mental health provides clear and significant data that demonstrate the benefits of this activity compared to the control group. The following discussion analyzes the results in detail, referencing the presented graphs and tables.

### 1. Cardiorespiratory Capacity (VO2 Max)

Results: The experimental group achieved an average increase of **12%** in **VO2 Max** after 8 weeks, while the control group showed no significant changes.

Analysis: This improvement clearly indicates that regular step-aerobic exercises enhance cardiovascular endurance by increasing the body's maximum oxygen consumption during physical activity.(15)

**Summary:**The increase in VO2 Max is associated with improved heart and lung function, confirming the effectiveness of step-aerobics in boosting aerobic capacity.

Reference to the graph This improvement is evident in the graph, where the experimental group recorded a higher value (40) compared to the control group (36).

### 2. Flexibility (Sit-and-Reach Test)

**Results:** The experimental group showed a **15%** improvement, while the control group demonstrated only minimal change.

**Analysis:** Step-aerobic exercises include both dynamic and static movements that promote muscle stretching and flexibility. Flexibility is a key factor in enhancing physical performance and reducing injury risks.

Interpretation: Participants in the step-aerobic program greatly benefited from continuous coordinated movements synchronized with music, which help maintain better ranges of motion.

Graph and table reference: The difference is clearly shown, with the experimental group scoring 25 and the control group scoring 21.

### 3. Muscle Strength (Isometric Tests)

Results: Muscle strength in the experimental group increased by 10%, while the control group showed no significant improvements.

Analysis: Step-aerobics activates the muscles of the lower limbs (e.g., quadriceps and gluteal muscles) through a variety of movements, strengthening them consistently.(16)

Summary: This result suggests that step-aerobics is an effective method for improving muscle strength, which is particularly crucial for enhancing physical endurance.

The data table shows the experimental group achieving an average of **55**, while the control group remained at 50. This highlights the advantage of structured physical activity over inactivity.

### 4. Stress Levels and Mood Improvement

- Results: The experimental group recorded a 25% reduction in stress levels (DASS-21 scale) and a significant improvement in mood, whereas the control group showed no meaningful changes.

- Analysis: Step-aerobics, as a rhythmic and music-based physical activity, helps release endorphins (“happiness hormones”), which reduce stress and enhance emotional well-being. Additionally, group participation fosters social interaction and self-confidence.

-Psychological Impact: The study emphasizes the importance of physical activity for mental health. Step-aerobics is especially effective for individuals dealing with high stress or mild depressive symptoms.

Graph results clearly show stress reduction in the experimental group to 15 units, while the control group remained at 20 units. Mood improvement is also evident, with values of 80 for the experimental group compared to 65 for the control group.

## 5. General Overview of Results

From the detailed data analysis, the following conclusions emerge:

VO2 Max and flexibility demonstrate significant improvements, proving step-aerobics' ability to enhance aerobic capacity and muscle elasticity.

- Muscle strength highlights the activity’s effectiveness in increasing lower limb power.

- Stress reduction and mood improvement confirm the psychological benefits of step-aerobics.

## Practical Recommendations

### Based on the study results:

Step-aerobics should be integrated into physical education programs in schools to raise awareness about the importance of physical activity.

Personalized programs should be developed to suit different age groups and physical abilities.

Step-aerobics should be widely promoted as an enjoyable and effective activity in community fitness centers and sports programs to encourage an active lifestyle.

## Conclusion and Recommendations

The study concludes that Step Aerobics offers extensive benefits for physical and mental health, adaptable to individuals of all ages and fitness levels.(17,18) Future programs should integrate these findings into school curriculums and community fitness initiatives to promote active lifestyles

This study clearly demonstrates the benefits of step-aerobics in improving physical performance and mental health. The differences between the experimental and control groups are evident across all measured metrics, as illustrated in the table and graph. This makes step-aerobics an excellent alternative for individuals seeking to improve their quality of life through structured physical activity. (19,20)

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## THE ROLE OF PUBLIC RELATIONS IN COMMUNICATION CRISIS IN THE ERA OF SOCIETY 5.0

Vidia Sinta Hapsari, Sholikhah

[vidia.sinta.hapsari@mhs.uingusdur.ac.id](mailto:vidia.sinta.hapsari@mhs.uingusdur.ac.id)

[sholikhah@mhs.uingusdur.ac.id](mailto:sholikhah@mhs.uingusdur.ac.id)

K.H Abdurrahman Wahid State Islamic University Pekalongan, Faculty of Islamic Economics and Business,  
Islamic Economy, Indonesia

### Abstract

This study aims to examine and determine the role of public relations in dealing with the corporate communication crisis in the era of society 5.0. The author uses qualitative research methods through library research. The data source in this article is a scientific journal that the author found on the website <https://scholar.google.co.id>. The results of the literature study research that the authors have found are that there are so many strategies that a public relations practitioner can use in dealing with the communication crisis faced by companies in the era of society 5.0, one of which is the wise use of technological advances and adapting to market needs. A public relations (PR) practitioner in a company is expected to address communication crises by utilizing creativity and effective communication skills with both internal and external audiences. In the era of Society 5.0, where advanced technology is widely integrated to simplify human life, companies have increasingly adopted practices like online transactions and digital wallets. A crisis serves as a warning signal for a company, requiring PR practitioners to implement wise strategies to manage communication challenges. These strategies include leveraging technology to build strong relationships with the public, upholding honesty, transparency, and accountability, maintaining ethical communication, exercising caution in the technological era, and mastering techniques to effectively manage communication crises.

**Keywords:** Public Relations, Crisis, Communication, Company, Society 5.0.



## COGNITIVE BEHAVIORAL THERAPY FOR ANXIETY AND DEPRESSION

**Prof. Dr. Olena A. Lykholat**

ORCID NO: [0000-0002-3722-8602](https://orcid.org/0000-0002-3722-8602)

e-mail: [lykholat2010@ukr.net](mailto:lykholat2010@ukr.net)

University of Customs and Finance, Dnipro, Ukraine

**Master Anastasia O. Proyavina**

e-mail: [lykholat2010@ukr.net](mailto:lykholat2010@ukr.net)

University of Customs and Finance, Dnipro, Ukraine

**PhD, Tetyana Y. Lykholat**

ORCID NO: [0000-0002-5076-0572](https://orcid.org/0000-0002-5076-0572)

e-mail: [lykholat2006@ukr.net](mailto:lykholat2006@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

**Lecturer, Maksim O. Kvitko**

ORCID NO: [0000-0002-3713-7620](https://orcid.org/0000-0002-3713-7620)

e-mail: [kvitko.max@gmail.com](mailto:kvitko.max@gmail.com)

Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine

**Prof. Dr. Yuriy V. Lykholat**

ORCID NO: [0000-0003-3354-8251](https://orcid.org/0000-0003-3354-8251)

e-mail: [lykholat2006@ukr.net](mailto:lykholat2006@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

### ABSTRACT

One of the main reasons that contribute to the development of anxiety and depression is cognitive distortions. These are errors in thinking that form and maintain negative beliefs and automatic thoughts. For example, people with anxiety often catastrophize events and predict the worst, while depression is dominated by generalizations (“I always have a bad time”) and negative interpretations of facts. Studies have shown that CBT is one of the most effective forms of therapy for patients suffering from anxiety and depression. It helps to change dysfunctional patterns of thinking and behavior that contribute to the development and maintenance of these disorders. CBT is based on the integration of cognitive and behavioral techniques, which allows you to work systematically with anxiety and depression. This approach considers a person in the context of their thoughts, emotions, and actions, which are interconnected. The effectiveness of CBT lies in the fact that it simultaneously affects both cognitive distortions and behavioral manifestations of disorders, helping patients not only better understand their problems, but also actively work on solving them. CBT teaches clients to identify these distortions, analyze them and replace them with rational judgments. One of the main techniques



of CBT is the analysis of negative thoughts and beliefs, which allows patients to identify automatic thoughts that negatively affect their psycho-emotional health. This technique helps clients replace irrational beliefs with more realistic and useful ones, which significantly reduces the level of anxiety and depression. Patients learn to find the relationship between their thoughts, emotions and behavior. For example, the negative thought “I can’t cope” causes anxiety and avoidance, while correcting this thought (“I have the resources to cope, even if it will be difficult”) contributes to reduced emotional tension and more adaptive actions. This allows the patient to realize that changing their thinking can affect their condition and behavior. Clients who use these methods usually experience significant symptom relief as they become able to control and adjust their reactions to stressful situations.

**Keywords:** dysfunctional patterns, psycho-emotional health, stressful situation, effective forms of therapy.

## TOXICOLOGICAL CHARACTERISTICS OF THE STATE OF BIOCONOSES OF THE ZAPORIZHKA WATER RESERVOIR IN THE AQUATIC AREA OF THE PRIDNIPROVS'KA THERMAL POWER PLANT

**PhD, Oleg M. Marenkov**

ORCID NO: 0000-0002-3456-2496

e-mail: [hydro-dnu@ukr.net](mailto:hydro-dnu@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

**PhD, Tetyana Y. Lykholat**

ORCID NO: [0000-0002-5076-0572](https://orcid.org/0000-0002-5076-0572)

e-mail: [lykholat2006@ukr.net](mailto:lykholat2006@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

**Prof. Dr. Olena A. Lykholat**

ORCID NO: [0000-0002-3722-8602](https://orcid.org/0000-0002-3722-8602)

e-mail: [lykholat2010@ukr.net](mailto:lykholat2010@ukr.net)

University of Customs and Finance, Dnipro, Ukraine

**PhD, Oleh S. Nesterenko**

ORCID NO: [0000-0002-7407-7911](https://orcid.org/0000-0002-7407-7911)

e-mail: [hydro-dnu@ukr.net](mailto:hydro-dnu@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

**Lecturer, Maksim O. Kvitko**

ORCID NO: [0000-0002-3713-7620](https://orcid.org/0000-0002-3713-7620)

e-mail: [kvitko.max@gmail.com](mailto:kvitko.max@gmail.com)

Kryvyi Rih State Pedagogical University, Kryvyi Rih, Ukraine

**Prof. Dr. Yuriy V. Lykholat**

ORCID NO: [0000-0003-3354-8251](https://orcid.org/0000-0003-3354-8251)

e-mail: [lykholat2006@ukr.net](mailto:lykholat2006@ukr.net)

Oles Honchar Dnipro National University, Dnipro, Ukraine

### ABSTRACT

Most of the Zaporizhia Reservoir is located in the densely populated Dnipropetrovsk region, which causes a high level of anthropogenic load on this reservoir. According to the results of long-term monitoring studies, stable zones of excessive concentration of oil products, heavy metals, pesticides, etc. were identified in the water area of the reservoir. The purpose of our work was to investigate the toxicological state of the biocenoses of the Zaporizhia Reservoir in the water area subject to the action of the water intake structures of the Prydniprovsk TPP, and to determine the impact of this energy facility on the ecological state and aquatic

living resources of the reservoir. Toxicological studies were conducted to determine the content of toxic substances in the reservoir and the levels of their accumulation in fish. The concentration of heavy metals in water (water intake area) and fish was studied monthly by the method of atomic adsorption spectrophotometry. According to toxicological studies, a high content of zinc, copper and manganese was found in the water of the experimental site of the Zaporizhia Reservoir compared to the existing fishery MPCs. The routes of entry of heavy metals into the fish body are food and the aquatic environment. According to toxicological studies, in the body of planktonic tulka, the MPC for the content of a number of heavy metals (manganese, zinc, lead, iron) was found to be exceeded by 1.5-2 times. In the body of benthic fish (flatfish, roach, crucian carp), high concentrations of manganese, nickel and iron were found compared to the MPC. The manganese content in the carcasses of roach and crucian carp was from 2 to 2.6 MPC, the nickel content was from 1.7 to 2 MPC, and the iron content was from 1.8 to 2.3 MPC. The largest amount of heavy metals was recorded in the body of this year's crucian carp, which is associated with its bottom biotope of existence and food spectrum. In the tulka, the content of zinc and iron also exceeded the MPC by 1.2 and 2 times, respectively. Zinc entered the tulka's body mainly from water, and iron from food objects. It should be taken into account that the toxic effect of heavy metals consists in their competition with a number of elements, for example, with calcium, which can negatively affect the growth and development of fish. They act as protoplasmic poisons, causing changes in the nervous system, kidneys and circulatory organs.

**Keywords:** environmental toxic effect, heavy metals, ecological state, aquatic living resources.

## SOCIAL CUSTOMER RELATIONSHIP MANAGEMENT TECHNIQUES AND PRINCIPLES

**Sima Shoghi<sup>1</sup>**

**Bachelor of Financial Administration and member of the Management Scientific Association of  
Imamreza International University, Mashhad, Iran**

**simashoghiss@yahoo.com**

**Dr. Alireza Moghaddasi<sup>2</sup>**

**Faculty Member of Imamreza International University, Mashhad, Iran**

**alireza\_moghaddasi@yahoo.com**

### Abstract

In today's competitive world, customers play a key and fundamental role in maintaining the position and survival of organizations. Customer relationship management helps organizations create effective relationships with customers. This concept is a business strategy combined with technology for effective management of the entire customer life cycle. On the other hand, the significant growth of social media has drawn the attention of organizations to this category. In this regard, Social CRM (SCRM) is a new concept in the customer relationship approach, the philosophy of which is to use the potential of social media to attract maximum customers and retain existing customers. This concept is a new strategy and approach to combine online customer relations, social networks and traditional customer relationship management systems. Social customer relationship management provides opportunities for companies that, in addition to marketing and sales, support services cause overall customer satisfaction and provide continuous feedback on the company's goods and services. The purpose of this article is to present the importance of SCRM and its application in organizations / businesses to achieve success.

**Keywords:** Customer, Customer Relationship Management, Social Customer Relationship Management

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<sup>1</sup> Asrar Street, Daneshgah Highway, Imam Reza International University, Mashhad, Iran

<sup>2</sup> Asrar Street, Daneshgah Highway, Imam Reza International University, Mashhad, Iran

**IMPLEMENTING THE ELECTRONIC CITY; A NEW APPROACH TO URBAN MANAGEMENT****Neda Daliri Quchan Atiq<sup>1</sup>****Bachelor of Business Administration and member of the Management Scientific Association of  
Imamreza International University, Mashhad, Iran****nedadaliri1288@gmail.com****Dr. Alireza Moghaddasi<sup>2</sup>****Faculty Member of Imamreza International University, Mashhad, Iran****alireza\_moghaddasi@yahoo.com****E. Abstract**

The expansion of the field of information technology application in urban life and citizenship has led to the emergence of concepts such as e-government, e-city, e-municipality, and e-citizenship in the literature related to information technology. E-city means providing services and exchanging information between citizens and municipalities and various urban places, which is seen around the clock and using technology-based tools and in the form of two-way communication and influence between citizens, government organizations, non-profit organizations, and businessmen. In this article, after providing an introduction to the concept of e-city, the basics of the formation and emergence of e-cities and their most important ones are mentioned. The following is a definition of e-city, e-municipality, and e-citizenship, and its design infrastructure and implementation stages. Then, the most prominent advantages and limitations of e-cities are explained.

**Keywords:** Information Technology, e-city, e-municipality, e-citizenship

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<sup>1</sup> Asrar Street, Daneshgah Highway, Imam Reza International University, Mashhad, Iran

<sup>2</sup> Asrar Street, Daneshgah Highway, Imam Reza International University, Mashhad, Iran



## OPTİMİZİNG MARKETİNG WITH DİGİTAL TECHNOLOGİES

**Assoc. Prof., Ihor Ponomarenko**

**ORCID: 0000-0003-3532-8332**

**i.v.ponomarenko.stat@gmail.com**

**State University of Trade and Economics, Faculty of Trade and Marketing, Department of Marketing,  
Kyiv, Ukraine**

**PhD Stud., Dmytro Ponomarenko**

**ORCID: 0009-0002-2904-3904**

**schumi7@ukr.net**

**International University of Business and Law, Kyiv, Ukraine**

### **Abstract**

Technological development leads to the intensive introduction of innovations into business processes. Thanks to advanced technologies, companies gain competitive advantages in relevant markets and increase the level of loyalty of the target audience. In the context of consumers' active use of the Internet, companies are faced with the issue of intensifying the use of advanced digital marketing tools, which contributes to the establishment of close and long-term communications with the target audience. Digitalization processes have led to the development and launching of specialized products and technologies. Among innovative products, the share of digital products that do not have a physical expression but are characterized by increased consumer demand has been growing significantly in recent years. First of all, it is advisable to pay attention to artificial intelligence, which, based on big data, allows optimizing marketing strategies. Generative artificial intelligence is used to create relevant content that is offered to target groups of consumers to ensure a high level of loyalty and conversion. The development of artificial intelligence algorithms allows moving to personalized communications, which involves generating content according to the needs of a specific consumer. Blockchain provides transparency and security of transactions and personal data in the process of interaction between a company and customers. The presented technology allows users to quickly and safely pay for goods and services in a digital environment. Augmented and virtual reality provides a new level of interaction between companies and the target audience. Immersion in the digital environment thanks to generated realistic images stimulates users' interest in the goods and services of the respective brands. Digital technologies arouse significant interest among representatives of generations Y, Z, and Alpha, which is taken into account by companies when building effective marketing strategies.

**Keywords:** Digital Technologies, Communications, Content, Marketing, Internet, Target Audience

**ADVANTAGES AND DISADVANTAGES OF ONLINE LEARNING IN ALBANIAN EDUCATION****Dr. BLERINA XHELAJ****University “Ismail Qemali” Vlora, Albania****Faculty of Humanities Sciences****Department of Education****e-mail [blerinaxhelaj@yahoo.com](mailto:blerinaxhelaj@yahoo.com)****<https://orcid.org/0009-0008-9169-4146>****Abstract**

**Objective:** The purpose of this paper is to highlight the challenges of online learning in Albania, such as the lack of technological infrastructure and partly the lack of experience on the part of the teacher and the student for the realization of the learning process in these conditions, online learning in Albania has developed during of the pandemic in the years (2020-2021) where, of course, it has had its own challenges through the advantages and disadvantages that distance learning brings.

**Material and Methods:** Usually, the online model is partially applied in albanian education. Higher education institutions partially represent the online system through distance learning classes, but more widely, it is applied through academic scientific conferences that take place between academics and different institutions at the international level. It should be emphasized that, positively, online use affects the teacher, but also the student in the practice and use of technological tools, in real time, regardless of their location.

**Results:** Through distance education, the teacher-student connection occurs in real time, where the teacher explains, asks, assigns tasks, this indicates that virtual learning is feasible. A positive effect is also teacher-student communication, which is more open, compared to the traditional learning process.

**Conclusions:** For the successful realization of distance learning, you need as much patience, will, self-confidence, a management of the situation, as well as a focus on the clear realization of the objectives on the part of the teacher in relation to the student.

**Keywords:** avantage, disavantage, infrastructure, real teaching, virtual teaching, management

## POLYMERIC MEMBRANES FOR DESALINATION USING MEMBRANE DISTILLATION: A REVIEW

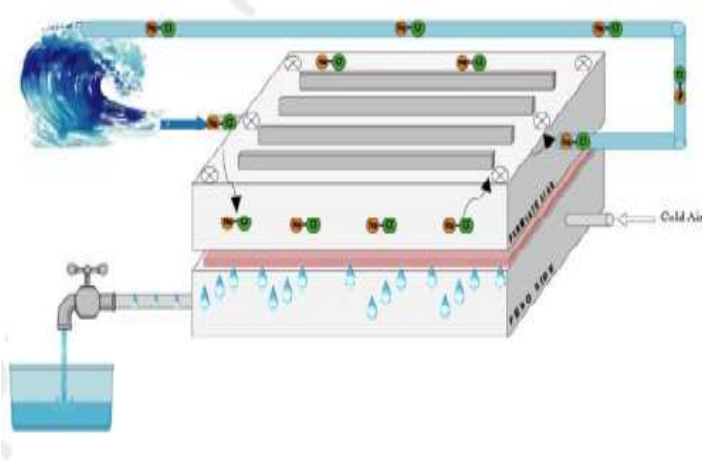
Zineb Ait Fares<sup>1</sup>, Miloudi Hlaibi<sup>1</sup>, Nouredine Kamil<sup>1,2</sup>, Rachid Ouchn<sup>1</sup>.

<sup>1</sup> Laboratory of Materials Engineering for Environment and Valorization (GeMEV), Faculty of Sciences Ain Chock, Hassan II University of Casablanca,

<sup>2</sup> Higher School of Technology Casablanca ESTC,

### Abstract

Membrane distillation (MD) is considered an emerging technology for seawater desalination. The hydrophobic polymers commonly used for this process are polytetrafluoroethylene (PTFE), polyvinylidene fluoride (PVDF), and polypropylene (PP). An ideal membrane for MD should exhibit characteristics such as high liquid entry pressure, low fouling rate, high permeability, and excellent mechanical resistance. Polymeric membranes, being more cost-effective than ceramic membranes, are considered a more affordable alternative and have dominated the research conducted so far on membrane distillation (MD). This review aims to provide a brief introduction to MD, summarize the research efforts to achieve the desired properties in polymeric membranes used in MD for desalination purposes and focus on the fabrication methods for these membranes



**keywords :** Membrane distillation, direct contact membrane distillation DCMD, desalination, polymeric membranes

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## THE EFFECT OF 4/3/2 TECHNIQUE ON IMPROVING STUDENTS' FLUENCY IN ESL CLASSROOM IN CYCLE TWO IN ONE OF THE SCHOOLS IN SAIDA DISTRICT

Sara Kayello

Lebanese International University (LIU)

Saida, Lebanon

### Abstract

In this investigation, the researcher focuses on improving ESL learners' fluency by implementing the 4/3/2 technique. The aim of this research is to examine the effect of the 4/3/2 activity on enhancing Lebanese learners' fluency in cycle 2, grade 4. It investigates if the use of this technique will improve students' speaking skill. In addition to broadening the awareness regarding fluency problems. Participants were 6 English teachers and 44 fourth-grade students chosen from one of the schools in Lebanon, Alofoq Aljadeed. For the purpose of addressing the research questions, this investigation employed a mixed-method approach incorporating quantitative and qualitative data. Data was collected through pretests and posttests applied to students before and after the implementation of the 4/3/2 technique and through interviews with English teachers of cycle two. The researcher was able to interpret the quantitative data using the SPSS Statistics program, which assisted in tackling the study's research questions. The researcher interviewed a selective number of teachers in a private school in Lebanon, to collect qualitative data about the teachers' viewpoints with respect to the problems they face while teaching speaking to ESL students. The findings of the research showed that the implementation of the 4/3/2 technique has a significant effect on enhancing Lebanese students' fluency. The results showed that implementing the 4/3/2 Technique greatly improved the participants' speaking test scores. The researcher of this study recommends that it is of great importance to encourage learners to reflect on their own performance using the 4/3/2 strategy. Creating a supportive and positive classroom environment that encourages students to take risks and make progress in their language learning journey is another important factor, for fluency is a process that takes time and practice to achieve.

*Keywords: Fluency, 4/3/2 Technique, English as a Second Language, Speaking Problems*

## خلاصة

في هذا البحث، يركز الباحث على تحسين طلاقة متعلمي اللغة الإنجليزية كلغة ثانية من خلال تطبيق تقنية 2/3/4. الهدف من هذا البحث هو دراسة تأثير النشاط 2/3/4 على تعزيز طلاقة المتعلمين اللبنانيين في الحلقة الثانية، الصف الرابع. ويتحقق مما إذا كان استخدام هذه التقنية سيؤدي إلى تحسين مهارة التحدث لدى الطلاب. بالإضافة إلى توسيع الوعي فيما يتعلق بمشاكل الطلاقة. كان المشاركون 6 مدرسين للغة الإنجليزية و44 طالباً في الصف الرابع تم اختيارهم من إحدى المدارس في لبنان، الأفق الجديد. لغرض معالجة أسئلة البحث، استخدم هذا التحقيق نهجاً مختلطاً يتضمن البيانات الكمية والنوعية. تم جمع البيانات من خلال الاختبارات القبليّة والاختبارات البعدية المطبقة على الطلاب قبل وبعد تطبيق تقنية 2/3/4 ومن خلال المقابلات مع معلمي اللغة الإنجليزية الحلقة الثانية. وتمكن الباحث من تفسير البيانات الكمية باستخدام برنامج SPSS Statistics مما ساعد في الإجابة على تساؤلات الدراسة. أجرى الباحث مقابلات مع عدد مختار من المعلمين في إحدى المدارس الخاصة في لبنان، لجمع بيانات نوعية حول وجهات نظر المعلمين فيما يتعلق بالمشكلات التي يواجهونها أثناء تدريس المحادثة لطلاب اللغة الإنجليزية كلغة ثانية. أظهرت نتائج البحث أن تطبيق تقنية 2/3/4 له أثر كبير في تعزيز الطلاقة لدى الطلاب اللبنانيين. أظهرت النتائج أن تطبيق تقنية 2/3/4 أدى إلى تحسن كبير في درجات اختبار المحادثة للمشاركين. ويوصي الباحث في هذه الدراسة بأهمية تشجيع المتعلمين على التفكير في أدائهم باستخدام استراتيجية 2/3/4. يعد إنشاء بيئة صافية داعمة وإيجابية تشجع الطلاب على المجازفة وإحراز التقدم في رحلة تعلم اللغة عاملاً مهماً آخر، لأن الطلاقة هي عملية تستغرق وقتاً وممارسة لتحقيقها.

الكلمات المفتاحية: الطلاقة، تقنية 2/3/4، اللغة الإنجليزية كلغة ثانية، مشكلات التحدث

## Introduction

This chapter provides a brief overview of the research topic, highlighting the significance of language fluency and the challenges individuals face in achieving it. It introduces the 4/3/2 technique as a potential intervention strategy and outlines the objectives and research questions that guide the study. Additionally, the chapter discusses the significance and scope of the research, and the methodology employed, and provides a preview of the subsequent chapters.

## Background of the study

The most powerful form of communication for expressing thoughts, sentiments, goals, ideas, and perspectives to a person, is language (Wibowo, 2014). The ability to communicate effectively and with high levels of competence in a language is widely acknowledged as the main goal of acquiring a language (Rahman & Deviyanti, 2018). Thus, language is used by individuals to communicate and share meaning, for life could be unimaginable and incomprehensible without it. In other words, peoples' use of language for interactions and knowledge transfer is essential to their daily life.

Many countries worldwide use English as a common language, a trend influenced by historical factors such as British colonization (Pennycook, 2002). This historical dominance led to English becoming a primary means of communication within local regions and globally. The importance of English-speaking nations in international commerce further solidifies its widespread use. Additionally, the United States' post-World War I dominance in science and technology contributed to English becoming a global language (Yazigy, 1991). Recognizing its significance, English is taught in Lebanon from kindergarten through university, serving as a key language for diplomatic relations, learning, and accessing information in various fields (Susanto, 2007).

Humans inherently seek perfection (Cavell, 2005), aspiring to a life of comfort and harmony. Similarly, teachers aim to achieve their goals in a classroom environment characterized by active learner engagement, free expression of opinions, and mutual respect (Ball, 2009).

One of the most appealing yet challenging subjects is teaching English as a Second Language (Johnson, 2006). Certainly, the teacher's dream (Catalina, 1990) is to have fluent students who can, in addition to their understanding of any lesson, express their thoughts in a classy and tactful manner without stuttering or being hesitant. It should be noted that the teacher's attempts and contributions are critical in assisting the students to learn how to communicate in class. Eventually, speaking is recognized to be the most crucial attribute out of the four skills: reading, writing, listening, and speaking (Ur, 1999). In most ESL classrooms students cannot speak fluently. Despite receiving years of teaching, a huge percentage of foreign students were incapable of speaking clearly and effectively (Dolberg & Rivers, 1978). That is to say, they cannot speak without stoppage or pausing. This problem is caused by a number of factors. Perceptual, linguistic, and emotional aspects are likely to influence EFL learners' ability to speak fluent and correct English (Wang, 2014). Additional research in this field is required to identify the factors that lead to students speaking problems and the techniques that assist in improving this speaking proficiency.

Fluency is the ability to communicate smoothly and effectively without frequent pauses (Bøhn, 2015). Proficient speakers convey ideas clearly, free from grammatical errors (Salaberri, 1995), and can appropriately structure conversations (Burns & Joyce, 1997). Consequently, being a fluent student is of great importance when it comes to speaking the English language.

Assisting students in enhancing speaking fluency is challenging, prompting exploration of effective teaching techniques. One such method, introduced by Keith Maurice in 1983 and known as the 4/3/2 approach, involves students taking turns speaking and listening. In this approach, learners aim to express their thoughts and opinions in three successive speeches without interruption. The technique not only facilitates the articulation of ideas but also enhances communicative competence by encouraging students to organize their



insights, making it easier to convey key points as speech length decreases (Zhou, 2006). Therefore, the 4/3/2 technique significantly influences students' speaking fluency.

### **Statement of the Problem**

Speaking has a significant role in human life since it is impossible for people to function normally without associating with others. Tarone (2005) affirms that the hardest and most complicated linguistic skill to master is speaking. Students express themselves verbally, but speaking is a skill they do in a way that is also suitable, appropriate, and sensible (Koran, 2015). Undoubtedly, in the teaching-learning of a second language, speaking is seen as a fundamental component. It has held an essential and critical position throughout the evolution of language instruction. As a matter of fact, speaking has really grown difficult for ESL students since they need to be proficient in a variety of sub-skills, including articulation, intonation, syntax, and lexicon.

Fluency issues in ESL classrooms have been extensively researched, aiming to identify underlying causes. Other studies, such as Ryczek (2012), highlight barriers like poor vocabulary or challenges in applying grammatical rules that impede participation in speaking activities. This issue is multifaceted, with barriers such as lack of confidence, limited vocabulary, and fear of judgment hindering students' oral communication skills. Addressing these hurdles is crucial for ESL teachers, aiming to improve students' ability to speak fluently in English on various topics. So, the question here is whether the ESL teacher can improve students' speaking fluency.

In Lebanon, although there is an increasing need to start teaching English as a second language at a young age, ESL students face serious problems when it comes to speaking fluently. They struggle with language learning and experience severe anxiety due to the difficulty of their speaking skill. Moreover, students frequently feel hesitant when participating in speaking activities because they fear errors and receiving negative feedback from the teacher and their peers (Ur, 1991). Due to this issue, Lebanese students struggle to think effectively and communicate their thoughts clearly in communication. Even though most ESL students frequently have the appropriate knowledge to do so, the majority of them lack the ability to speak fluently. In tackling this problem, it is of great importance to examine the difficulties faced by Lebanese ESL students in fluency because these problems can make it difficult for them to develop successful effective speaking abilities.

The teacher's method significantly impacts students' speaking abilities (Bell & Jackson, 2021). In teaching speaking, effective methods are crucial for actively engaging students, promoting spontaneous communication in English (Rahmat, 2019). Creating a supportive environment is key, fostering students' confidence in speaking (Brown, 2001). Despite various opportunities, ESL students' communicative skills may not improve substantially. The 4/3/2 technique proves effective in providing occasions for ESL learners to engage in

speaking activities, enhancing both fluency and accuracy in English (Zhou, 2006). Examining the impact of the 4/3/2 technique allows for a deeper understanding of its role in improving ESL students' fluency.

ESL Speaking courses focus on improving students' communication skills, employing diverse teaching methods. This study investigates fluency challenges faced by Lebanese ESL students and assesses the effectiveness of the 4/3/2 technique in enhancing their oral communication skills. The research aims to determine how this structured intervention contributes to fluency improvement and addresses factors hindering progress in achieving proficient oral communication skills. The findings will guide educators in implementing evidence-based practices to tackle fluency challenges and support targeted interventions for ESL students, ultimately enhancing their fluency skills.

### **Rationale**

The researcher was able to find many articles and references tackling the effect of the 4/3/2 technique on ESL students' speaking fluency. Various studies were conducted all over the world to stress the importance of fluency in speaking. Many researches have shown an acceleration of speech and a reduction in the students' hesitations (Indriyani, 2013; Yufriзал, 2018). Most researchers show a development in the learners' speaking fluency after the implementation of the 4/3/2 approach. In addition to assisting learners to speak more fluently, the 4/3/2 method also helps them participate more actively in class and has a positive impact on the whole classroom environment (Ryczek, 2012). Hence, the 4/3/2 is proven to be an effective technique in improving ESL learners' fluency.

On the other hand, few studies, in Lebanon, dealt with fluency despite the importance of this fundamental skill. As a matter of fact, English is considered to be one of the most important languages to master, for it is an international language; that is why an ESL teacher's goal is to enable learners to speak fluently with minimal stress and anxiety (Miwon Jo, 2010). Undoubtedly, English is also the world's most widely spoken second language (Phan Le Ha, 2009). That is the main reason why teaching English is beneficial for Lebanese ESL learners at an early age. There is a significant need to investigate the problems faced by fourth graders Lebanese ESL students in speaking fluency. Starting from this point, and in order to improve ESL students' fluency, this research chooses and focuses on one of the fluency strategies and its implementation in the English language classroom.

## **Purpose of the study**

The purpose of this mixed-method research is to investigate the effect of the 4/3/2 technique on enhancing ESL learners' speaking proficiency levels. It also aims to determine the viewpoints of English teachers of cycle two with respect to the problems they face while teaching speaking to ESL students. This proposition will be tested in a private school in Lebanon with pre and post-testing to compare students' fluency before and after the implementation of the 4/3/2 technique.

## **Research Questions**

One of the most challenging parts of any research is choosing and creating an effective research question (Aslam & Emmanuel, 2010). The research question is indeed a critically essential stage in the research process because it helps focus the study's attention on a few crucial aspects (Doody & Bailey, 2016). The researcher looked for responses to the following questions in this study:

1. What are the teachers' views on the students' speaking problems in cycle two?
2. What is the effect of the 4/3/2 Technique on Lebanese ESL learners' fluency in grade four?

## **Hypotheses**

This research aims to test the following hypotheses.

H1: If the 4/3/2 Activity is applied, ESL students' fluency will not improve.

H1: If the 4/3/2 Activity is applied, ESL students' fluency will improve.

## **Significance of the Study**

The positive impact of this study extends to ESL students, empowering them to overcome fear and shyness while improving their speaking fluency. ESL teachers benefit by gaining an effective technique to enhance learners' fluency and language expression. Beyond the classroom, the broader society can experience positive outcomes as fluent speakers contribute to a more prosperous and successful community. Furthermore, this research provides valuable insights for future ESL investigations in Lebanon, addressing the specific challenges faced by Lebanese learners in achieving speaking fluency. It also serves as a reference for researchers in the realm of teaching English as a second language, offering practical recommendations for improving speaking skills. As a result, the study has the potential to be a valuable resource for various stakeholders involved in ESL education.

## **Literature Review**

### **Theoretical Framework**

International Communication is conducted in English. Many textbooks and colleges throughout the world use English as their primary language (Baird & Baird, 2017). Moreover, it is the primary language of several

nations, and millions of people speak it as their first language. But that is not all; it is also the world's most widely spoken second language (Matyakubov, 2020). That is the main reason why teaching English is essential for ESL learners at an early age (Matsuda, 2021). Certainly, most schools in Lebanon teach English as a Second Language since childhood along with the Arabic Language, because it is crucial for socializing (Alzamil, 2019). Although speaking fluency is an essential aspect of communicative language instruction, there are certain limitations that affect Lebanese ESL learners' performance. Students learn the language from an early age, yet they are not able to speak it fluently. Most students in Lebanon in the elementary cycle lack the ability to communicate using ESL without hesitation. By examining the importance of speaking skills in ESL classrooms, and remarks that many researchers provided, the researcher in this study finds that speaking with fluency is considered an important crucial skill that needs to be improved in the elementary cycle in Lebanon.

### **The Sociocultural Theory**

Language is viewed as a symbolic medium for acquiring rules in written and spoken discourse, particularly in the study of second language speaking skills (Boxer & Cohen, 2004). Research explores how learners in specific speech communities acquire their second language. In second language classes, skilled teachers act as socializing agents, mirroring the role of parents in toddlers' first language development, reflecting societal techniques in classroom engagement (Boxer, 2006).

Sociocultural Theory, recognized by Boxer (2006), provides a paradigm for understanding the development of second language speaking skills, rooted in the work of Lantolf and inspired by Lev Vygotsky (Vygotsky, 1978). This approach views language learning as a sociocultural process, combining social interaction with cognition. Discussions among applied linguists, sparked by Vygotsky's investigation (Lantolf, 2013), highlight its impact on ESL speaking instruction. The sociocultural approach, prioritizing social communication and cultural engagement, is beneficial for young students, focusing on individuals' roles in interpersonal relationships and socially organized activities influencing psychological growth. Some studies further distinguish elements, such as "ongoing engagement and response to challenge" (Klem & Connell, 2004, p.262).

Applying Vygotsky's theory, peer-to-peer interaction is effective for ESL learning, allowing students to express opinions and reduce anxiety (Tudge, 1990; Jackson & Bruegmann, 2009). Creating a welcoming classroom atmosphere fosters sociocultural understanding as students engage in duo conversations, sharing sentiments, worries, and ambitions, ultimately enhancing their overall learning experience.

## **Self-Efficacy and the Social Cognitive Theory**

Within this paradigm, individuals are active participants in their developmental processes, with self-efficacy reflecting one's perception of their abilities (Bandura, 1997). First introduced by Bandura in 1977, self-efficacy has been studied across various fields, promoting education, engagement, success, and awareness (Multon et al., 1991). It significantly influences students' behavior in educational contexts, impacting motivation, determination, enthusiasm, and success levels (Schunk & DiBenedetto, 2015). High self-efficacy levels correlate with easier learning engagement, increased effort, strong perseverance, high involvement, and top-level performance compared to low self-efficacy (Schunk & Zimmerman, 2012).

Social cognitive theory underscores personal responsibility and the perception of significant life influence (Cattaneo & Chapman, 2010). Fear and tension serve as sources of self-efficacy knowledge for learners (Bandura, 1997), providing indicators of expected success or failure. Self-efficacy also impacts learners' decision-making, influencing them to choose activities they feel competent in and reject others (Patall, 2012).

Researchers found a significant correlation between language acquisition and self-efficacy in learning a second language (Hsieh & Schallert, 2008). Self-efficacy predicts second language acquisition (Magogwe & Oliver, 2007) and affects learners' psychological aspects (Lovibond, 2011; Hsieh & Kang, 2010), contributing to ESL learners' success in speaking ability (Mills et al., 2006).

Group collaboration is emphasized, with a group's skills termed collective self-efficacy (Bandura, 1997). As students mature, peers become more significant, influencing confidence and motivation (Wentzel et al., 2014; Meece & Mize, 2010). Teams impact students' exposure to tasks, communication opportunities, and the ability to observe others at work (Zingaro, 2014).

## **The Psycholinguistic Theories**

Psycholinguistics, a field describing language learning, development, and interpretation, influences language instruction methodologies (Purba, 2018). From a psycholinguistic perspective, cognition and language, though distinct, are interconnected (Cardenas Claros, 2011). Learning is viewed as a cognitive, personal process before becoming social (1985). Psycholinguistics, the psychology of language, is applied in language education (Danesi & Titone, 1985), examining psychological influences on language learning (Masny, 1994) with a focus on speech and interaction in context.

The cognitive psycholinguistic approach historically guides second language speaking instruction, emphasizing active personal learning (Skehan, 1998; Long & Doughty, 2003). Fluent language production relates to psycholinguistic processes, involving direct and indirect learning, informative and practical knowledge, and proceduralization (Simard, 2022). Indirect learning, an automatic process, contributes to L1 and

L2 learning, complementing direct processes. Informative knowledge includes direct information, vocabulary, and rule knowledge, while practical knowledge involves actual language usage. Proceduralizing is crucial for competent language usage (DeKeyser, 2017; Hulstijn, 2002, 2011), facilitating the efficient linkage of informative and practical information. However, for many language learners and instructors, achieving faster spoken performance suffices as a primary goal.

### **The Sociolinguistic Theory**

Sociolinguists stress the importance of both what is spoken and how it's spoken (Bright & Deshpande, 1995). Factors like age, gender, accent, economic class, and character influence speech styles (Holtgraves & Dillard, 2014).

Sociolinguistics explores the language-society relationship, crucial for understanding language within communities (Nadasdi, 2021; Li, 2010). Incorporating sociolinguistics in language teaching is vital for students to communicate in relevant cultural conditions (Hornberger, 1995).

Studying ESL speaking practices, enriched by sociolinguistic works, aids effective teaching (Kaye & Jassem, 1997). Educators, emphasizing professional speaking, can inspire sociolinguistic awareness through contextualized language presentation (Graceful Onovughe, 2012).

Peer interaction, foundational for learning, is central to effective techniques like the 4/3/2 approach, providing opportunities for creative expression and ESL learning. Effective instructional programs should include fluency exercises addressing speaking issues (Nation, 2014).

### **History of ESL in Lebanon**

Since the arrival of American preachers in Lebanon, English has undergone historical modifications, solidifying its enduring role in the region (Perspectives on English in the Middle East and North Africa, 2010). Officially recognized as a foreign/second language in Lebanon since 1946, English has become increasingly prevalent, drawing more students than any other language (Braine, 2014; Perspectives on English in the Middle East and North Africa, 2010). Recognizing its importance alongside Arabic, more Lebanese now consider English crucial for education and career opportunities in the globalized world (Crystal & Honorary Professor of Linguistics David Crystal, 2003).

To engage learners effectively, the modern Lebanese curriculum emphasizes communicative methodologies over traditional syntax instruction (Zeitoun, 2018). Educators adapt their methods to meet evolving educational goals, aiming for effective English communication skills. Encouraging contextually relevant language exercises, the teaching methods evolve from basic proficiency themes to more complex topics, ensuring a supportive environment for students to express desires, thoughts, and perspectives (Shaaban & Ghaith, 1997).



Teaching ESL in Lebanon presents challenges due to varying student qualifications and progress rates (Zeitoun & Helenelabed, 2018). Despite these challenges, the need for professional language instruction remains essential for fostering effective English communication abilities internationally.

### **Problems Faced by ESL Students in Speaking**

Rahman & Deviyanti (2018) emphasized that the desired goal for ESL students is fluent and effective communication. However, achieving this relies on curriculums providing a framework that nurtures speaking proficiency. Despite a good understanding of language usage, students may struggle with fluency, often linked to a lack of inspiration and confidence (Sari, 2017). Limited communication skills lead to hesitancy and fear of judgment, discouraging active engagement and creating anxiety (Widayanti et al., 2020; N.W.S.C, 2021).

Mistake-related anxiety and the desire to avoid critical feedback further hinder speaking improvement and confidence (MacIntyre & Gregersen, 2012). Unequal opportunities for communication, where teachers favor more proficient learners, contribute to the challenge faced by less fluent students (Briones Huayamave & Ramírez-Avila, 2011). Difficulty in understanding complex subjects, coupled with varied instructional practices and limited chances for language use outside the classroom, adds to speaking difficulties for ESL students (Jassem, Z. A., & Jassem, J. A., 1997; Ganschow et al., 1998; Thomson, 2017).

### **Definition of Speaking**

Speaking is a fundamental aspect of communication, involving the production of words or expressions to convey meaning (Gert and Hans, 2008; Kayis, 2006). It plays a vital role in language acquisition for children and is crucial for everyday communication and language evolution (Rebecca, 2006). Richard (2008) emphasizes the importance language learners place on mastering English speaking skills. It enables individuals, especially children, to communicate effectively in real-life situations, although students may face challenges in articulating thoughts (Rahayu, 2015). Among the language skills, speaking is essential for second language development, requiring time and practice to master.

### **Definition of Fluency**

Fluency in speaking has various definitions. Skehan (1996) defines it as the ability to articulate words without unnecessary pauses. Nation (1989) sees fluency as the effective use of knowledge, often assessed by speed and lack of hesitancy. Hedge (2000) adds fluency to the list of communicative requirements for proficient English speakers. Others, like De Jong and Perfetti (2011), focus on measurable aspects like gaps, stutters, and repeats. Ellis and Sinclair (1989) stress purposeful and spontaneous communication without unnecessary pauses. Richards (2006) attributes speaking fluency to factors like problem-solving and communication



techniques. Koizumi (2005) links fluency to speech rate without self-correction or repetition. Rood (2020) notes fluency as the most noticeable aspect of L2 oral performance.

### **Fluency Development: Individual Proficiency and Social Interaction**

Fluency development encompasses two interconnected dimensions: individual fluency improvement and social fluency enhancement. The former focuses on specific linguistic skills, reducing pauses, and refining language production through targeted practice. Social fluency enhancement emphasizes effective communication in real-life situations, including turn-taking, coherence, and cultural sensitivity. It delves into pragmatic and sociocultural aspects beyond linguistic proficiency. By understanding these dimensions, educators can implement comprehensive approaches to nurture both linguistic skills and meaningful communication abilities.

#### **Importance of Fluency**

Fluency in speaking is crucial for effective second language learning, enabling learners to create meaningful utterances to achieve their goals (Barrot & Agdeppa, 2021). It ensures a continuous stream of speech, facilitating better comprehension and smoother flow of conversational ideas (Garajayev et al., 2018). Emphasizing fluency before syntactic accuracy is essential to prevent students from hesitating to speak (Walton, 1983). Instructors face the challenging task of teaching speaking fluency, a critical skill that reveals the true progress of language acquisition in learners (Bahrani & Soltani, 2012).

#### **4/3/2 Activity**

Maurice (1983) introduced the 4/3/2 technique to enhance spoken language fluency. This method involves students delivering the same speech to different listeners with varying time constraints. Working in pairs, Student A initially speaks for four minutes without interruption, followed by three minutes with a new partner and finally two minutes with another partner. Meanwhile, Student B listens to three different speakers without engaging in conversation. The roles are then reversed, allowing both students to experience speaking and listening components. The 4/3/2 approach has proven effective in improving students' conversational fluency.

#### **Methodology**

##### **Design of the Study**

A mixed-method study design was used in this study. It allows the researcher to incorporate qualitative research with data on a conceptual, critical, and analytical level. When both methodologies are used together, they give a greater grasp of research challenges and complicated issues than if they were used separately (Clark 2007). Hence, to support the investigation in this study, qualitative and quantitative data were gathered. The researcher conducted the experiment in two sections of grade four; both sections included twenty-two students.

The control group was one section, while the experimental group was the other. In this study, pre and post-tests were conducted to accurately measure the change in a certain scenario or skill. This methodology is useful because it aids in determining the impact of one variable on another.

In addition to that, in order to get more consistent results, and to be able to determine the causes of the problem faced by Lebanese ESL students in the elementary cycle in grade four in fluency, and to improve their speaking skills, the researcher took into account the opinion of the teachers. An interview with six teachers was done to obtain the result more precisely. Undoubtedly, the most frequent data-gathering method in the research study is the interview (Hussein, 2022).

In this research, the quasi-experimental design was used to assess the efficacy of implementing the 4/3/2 technique in improving ESL grade four students' fluency. Before implementing the 4/3/2 activity, students' speaking competence was evaluated by comparing their grades in both sections. After the intervention in the experimental group, the researcher conducted a post-test to examine if the implementation of the 4/3/2 technique was successful in improving students' speaking fluency in the ESL classroom. Thus, the research studied the students' progress after applying the 4/3/2 technique. Given the variety of methods and data collected throughout the study, the researcher chose a mixed-method approach to integrate different types of data, such as quantitative and qualitative data.

After submitting the permission paper provided by the Lebanese International University (LIU), which shows the details and purpose of the study, permission was granted by the hosting school.

### **Participants**

The study was conducted at Alofoq Aljadeed School in Saida, South Lebanon, spanning two months (8 weeks) with 44 fourth-grade students aged 9 to 10. The participants, from both genders and diverse backgrounds within the Lebanese culture, were divided into two sections: a control group and an experimental group. The experimental group received the 4/3/2 approach, while the control group did not. The selection of students from one school and the same grade, chosen for their varying fluency levels, led to a nonprobabilistic and convenient sample.

To understand ESL students' challenges in fluent English communication, the researcher interviewed English teachers from grades 4, 5, and 6 in the same school. These teachers, with an average of 10 years of experience, were predominantly females aged 30 to 36, holding degrees in English Literature or Master's Degrees in Education from reputable universities. The non-probability sampling technique was employed, considering the availability of participants at the researcher's workplace, a private school in South Lebanon.

## **Instruments**

The study employed an experimental design to assess the impact of implementing the 4/3/2 technique on the fluency of grade 4 students in Lebanon. Both pre- and post-tests were administered to the students, covering topics related to the lessons taught in class. The pretest gauged students' initial fluency before the 4/3/2 implementation, and the posttest assessed the effectiveness of the technique in improving fluency.

Additionally, the researcher conducted structured interviews with six ESL teachers for cycle 2 to understand the challenges faced by Lebanese ESL students in grade four regarding fluency and explore potential solutions. The questions focused on teachers' perspectives on students' speaking difficulties and strategies for improvement. The interviews were recorded, transcribed, and analyzed thematically.

To provide context and insights into ESL students' speaking challenges, the researcher reviewed related studies and dissertations published between 2011 and 2021 in the literature. This literature search aimed to identify common problems faced by ESL students in speaking fluency and explore the underlying reasons for these challenges.

## **Validity of Data Collection Tools**

The study rigorously assessed the effectiveness of the 4/3/2 technique on ESL students' fluency, using both pre and post-tests for quantitative measures and teacher interviews for qualitative insights. Standardized procedures were implemented to maintain consistency and minimize bias. The comprehensive approach, combining quantitative and qualitative data, adhered to established research guidelines, ensuring a thorough analysis of the technique's impact on students' fluency and challenges faced.

## **Reliability of Data Collection Tools**

The research study prioritized reliability through a randomized controlled experimental design, combining quantitative and qualitative approaches. Validated measurement instruments were used for fluency assessments, ensuring accuracy in data recording. Thorough interview guidelines were implemented to maintain consistency in qualitative data collection, and verbatim transcriptions enabled precise analysis and member checking. These measures collectively aimed to enhance the overall reliability of the study's findings.

## **Procedure**

### **Data Collection**

In order for the researcher to be able to compare students' speaking fluency before and after the implementation of the 4/3/2 technique, she obtained the approval of the School of Education presented by Prof. Anwar Kawtharani. These approvals gave the researcher permission to conduct her research.

However, in order to conduct the study on the students, the researcher needed the approval of the school's principal, Ms. Malaki, who was requested to sign a consent form (Appendix A). In addition, fourth-graders were required to sign a consent form because they are minors, and their parents were requested to sign another consent form (Appendix B and C).

Sections A and B from the Alofoq Aljadeed School were used by the researcher. These two sections were the two groups, the control group and the experimental one.

### **Intervention**

The study adopted a pretest-posttest design conducted over six weeks, adhering to a 40-minute weekly schedule. Fourth-grade students were designated as speakers and listeners, engaging in the 4/3/2 method. Utilizing PRAAT software, pauses and words per minute (WPM) were analyzed for both groups, with pauses exceeding 3 seconds considered critical (De Jong & Perfetti, 2011). The experimental group applied the 4/3/2 technique weekly, while the control group had standard discussions. SPSS software measured variations in WPM and pause lengths. In Week 8, both groups underwent the same posttest, with Week 1 serving as a pretest. During the pretest, participants had eight minutes for note-taking. The only notable difference was the experimental group's six-week application of the 4/3/2 method (De Jong & Perfetti, 2011)

#### **I. Pretest**

In both experimental and control groups (sections A and B), the researcher conducted a pretest, where fourth-grade students discussed a common topic ("How do your actions affect others?"). To enhance engagement, the researcher used a poster and a video related to the topic. Participants answered questions, fostering interaction. The small-group discussion approach was employed, with students divided into groups to discuss the topic for 8 minutes, taking notes before the discussion. The researcher, using a 1-minute timer, recorded each participant's speech. The pretest aimed to assess fluency levels, measuring the length of pauses and words per minute (WPM) in both groups. The researcher maintained records for comparison with post-test results after implementing the 4/3/2 activity in the experimental group.

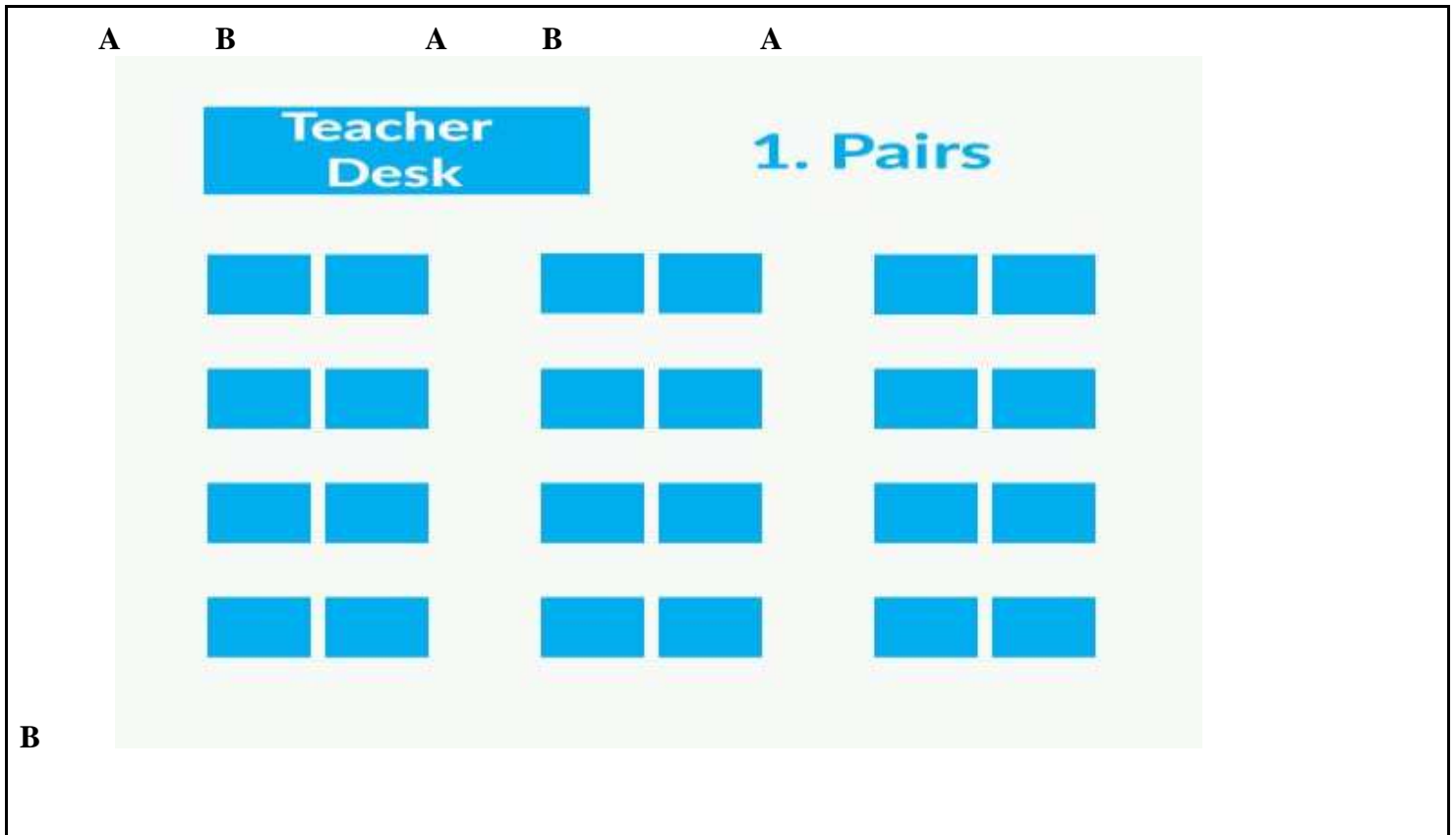
#### **II. Practice Session**

The 4/3/2 practice session commenced with a brief explanation of fluency, emphasizing its focus on speaking comfortably rather than correctness in language structure. The researcher presented a topic, considering students' abilities and concerns, ensuring it was not overly challenging. Participants were given 6 to 8 minutes to compose their speeches without writing complete sentences. The researcher then organized pairs, with participants facing a classmate in the opposite row. The first presenters spoke for four minutes, followed

by three and two minutes with different listeners. Speakers switched partners for each segment, maintaining a comfortable environment for expressing ideas in English.

**Figure 1**

*4/3/2 Pair Seating Organization*



Without a doubt, the researcher motivated the participants to keep speaking even if they must repeat, extend, or elaborate on what they have previously stated. The researcher set a timer to keep a record of how long every speech was going to last. The participants' roles were switched once all of the participants who were given speaker roles had finished speaking. Simultaneously, listeners and speakers were switched. Up till every participant has completed his task, this procedure was completed. The researcher provided the participants with some kind of feedback after they all delivered the three presentations. Feedback centered on the participants' presentations, achievements, and speech content rather than speech correctness.

### III. Posttest

The experiment spanned six weeks, with the control group utilizing small group discussions, while the experimental group (Section A of grade 4) employed the 4/3/2 technique once a week. Both groups discussed the same topics (How do your actions affect others?), and the pretest procedure was replicated for the posttest. Students' speeches were individually recorded, enabling a comparison of fluency levels between the control and experimental groups after implementing the 4/3/2 technique. The researcher closely monitored and documented speaking sessions to assess students' proficiency.

### Data Analysis

The researcher gathered and evaluated the data when the procedure was completed. It can be assumed that the data is parametric based on the fact that this is an experimental study with normally distributed data. The researcher compared the means of the control and experimental groups using inferential statistics. Furthermore, the t-test, which was used to compare the means of two groups, was employed by the researcher in this investigation. T-tests are within the category of parametric methods for statistical inference. There are two sorts of t-tests: independent and paired. In this study, the independent t-test was used since it ensured that the participants in each group were independent and unconnected to one another—individuals from one group cannot be participants in the other. The independent sample t-test also checked whether the participants of both the control and the experimental groups were homogenous before the treatment. When the two groups being compared were related to one another and depended on one another, a paired t-test was employed to check if there was a significant notable difference between the pre and post-test grades in both groups.

T-tests are typically employed when the study's participants are split into two separate independent groups, one of which was treated with X and the other with Y. For each group, this test might provide two different sorts of results: pre-X and post-X, and pre-Y and post-Y, before and after the therapy or intervention (Kim, 2015).

Regarding the interviews, the researcher used a deductive method and a thematic analysis to determine the stakeholders' viewpoints on the fluency issues ESL students face. The researcher structured the data effectively and usefully for each question by accumulating similar answers, counting the richly detailed ones, creating initial ideas, categorizing the data into patterns, and grouping the answers under each category after recording and interpreting the interviews' comments. For each type of stakeholder, these stages were duplicated beneath their appropriate headings. It is important to note that the researcher discontinued performing further interviews when information reached a saturation point.

## Results

### Teachers' Views on Students' Speaking Problems in Cycle Two:

#### Teachers' Interview Results

To proceed with the research study, the researcher used selective sampling to interview and discussed the teachers' views on the students' speaking problems in cycle two. Six teachers who specialized in teaching English as a second language and teaching different grade levels of cycle two were interviewed. The following table represents the background information about the teachers in the selective sampling.

**Table 1**

*Teachers' Interview: Grade Level*

Grade Level	Number of Teachers	Percent
Grade 4	1	16.67%
Grade 5	2	33.33%
Grade 6	3	50%
<b>Total</b>	<b>6</b>	<b>100%</b>

The results of the interviews with teachers of cycle two were arranged and divided into titles and subtitles.

#### *Problems Faced by Students in Fluency*

**Low Self-Confidence.** Teachers 1, 2, 3, 4, and 5 believed that “*low self-confidence*” is the main problem students suffer from while trying to express themselves using a second language. According to teacher 3, “*Most students showed reluctance or shyness while speaking, especially in front of the whole class*”. Teacher 2 added that “*students fear making mistakes which might lead to the suspicion of being mocked or judged by their peers*”.

**Arabic Translation.** Teachers 1, 2, and 3 assumed that “*the Arabic translation*” is a serious problem. According to teacher 3, “*Most students considered the answer or the speech in Arabic, their native language, before even trying to express their attitudes or feelings regarding the chosen topic*”. Teacher 2 added that “*this translation issue was considered the biggest obstacle to communicating effectively and smoothly in a second language because students relied on their native language where they paused a lot*”. Moreover, Teacher 1 argued that “*their ability to think in their native language was forced because the response was closely correlated to the terms of their language*”. Another teacher added that “*it can be quite stressful to speak English because students' brains cannot translate at an adequate pace to maintain their normal speech rate*”. According to her, “*Students have a natural tendency to think in their mother tongue, and they cannot get out of it*”.



**Lack of Vocabulary, Ideas, and Grammatical Rules.** Teachers 3, 4, 5, and 6 considered that “*the lack of vocabulary and ideas could affect students' flow of speech*”. According to them, it can be challenging for students to successfully communicate their ideas, opinions, and views. Teacher 6 added that “*this might be as a result of their inability to remember the terms they require, their inability to comprehend the implications of the phrases they do learn, or the fact that they do not recognize many terms or phrases*”. Teachers 5 and 6 believed that what affects students' fluency is “*the lack of grammatical rules*”. According to them, students frequently misuse grammar, which can modify the meaning of their sentences and have an impact on their sentence structure and clarity which in fact leads to hesitation and pausing a lot while speaking. The following table represents the different ideas that were communicated by the teachers.

**Table 2**

*Teachers' Interview: The Problems Faced By Students in Fluency*

Response	Frequency	Percent
Low self-confidence	5	83.33%
Arabic translation	3	50%
Lack of vocabulary and ideas	4	66.66%
Lack of grammatical rules	2	33.33%

It should be noted that the percentage of the response was calculated in relation to the number of the interviewees (6 teachers).

### ***Improving Students' Fluency***

**Daily Speaking Activities.** All teachers believed that “*incorporating daily speaking activities into the curriculum would assist in enhancing students speaking skills*”. Teacher 1 stated that “*these daily speaking activities would accelerate students' progress to be fluent speakers*”. Teachers 2, 3, and 5 believed that authentic experiences requiring communication should serve as the basis for this speaking.

**Speeches and Teacher's Accent.** Assigning speeches to listen to at home was another issue some teachers agreed on to improve students' fluency. Teachers 5 and 6 believed that “*listening to native speakers or even to those speakers with good pronunciation would help enhance students' listening skills, for they might imitate*”. That's why most teachers, teachers 1,2,3,4, and 6, agreed that the “*educators' accent*” would also improve students speaking especially when they try to sound like their teacher. According to them, students become

more accustomed to selecting the right words for the occasion as they listen to the English language that they are willing to master more frequently.

**Integrating Speaking with Other Skills.** Teachers 1, 2, 4, and 5 stated that “*integrating speaking with other skills would help students become more fluent in a second language*”. Teacher 1 explained that “*this integration could be done with reading, learning a grammatical rule, or even when learning new vocabulary words, and it would always give students an opportunity to speak more frequently in class*”. Moreover, Teacher 5 added that “*this integration challenges students to communicate comfortably in the language while exposing them to real-life scenarios*”. Hence, those teachers believed that students’ achievement would be impacted favorably by integrating speaking with other skills.

**Group/ Peer Discussion.** Teachers 1, 3, 5, and 6 stated that having students work together in groups to express their attitudes or feelings regarding a particular task is another essential issue to improve their self-confidence and thus improve their fluency. Teachers 1 and 6 added that “*the learners would get the chance to practice speaking English to one another and using it in conversation while working in a group*”. According to them, students’ language proficiency and fluency may increase when they practice speaking in front of others or in a group. The following table displays the counts and percentages accordingly.

**Table 3**

*Teachers’ Interview: Improving Students’ Fluency*

Response	Frequency	Percent
Daily speaking activities	6	100%
Speeches	2	33.33%
Teacher’s accent	5	83.33%
Integrating speaking with other skills	4	66.66%
Group/Peer discussion	4	66.66%

### **Dealing With Individual Differences In Speaking Class**

**Wide Range of Opportunities.** Teachers 3, 4, 5, and 6 believed that for students to learn well, the teacher should give them a wide range of educational opportunities such as employing a variety of materials instead of just books and implementing a number of co-activities to maximize each student's abilities. According to teacher 4, “*This wide range of opportunities would affect students positively and enhance their speaking skills because it would meet every single student’s need and interest*”.

**Pair Work.** Teachers 5 and 6 argued that grouping students would help enhance the whole teaching-learning process thus improving the speaking skill especially when high achievers help and support other students with limited abilities. Teacher 5 added, “*This grouping will create a comfortable environment that encourages all students to succeed in expressing their views and opinions freely with no hesitation*”. The following table represents how teachers deal with individual differences in speaking classes.

**Table 4**

*Teachers’ Interview: Dealing with Individual Differences In Speaking Classes*

Response	Frequency	Percent
Wide range of opportunities	4	66.66%
Pair work	2	33.33%

### **The Effect of the 4/3/2 Technique on Lebanese ESL Learners’ Fluency in Grade Four:**

#### **I. Pretests grades (WPM/ Length of pauses) for the control and the experimental groups**

To know if there’s a statistical difference between the means of the pretest of both the control and the experimental group, a comparison was made between means using T-Test to confirm if students are homogeneous before the treatment. The data homogeneity showed no significant difference between both the control and the experimental group (Table 7 and Table 8). Hence, the participants of both groups are homogeneous.

The P value is regarded as the probability that the difference observed between groups is due to chance. When the P value is close to one, it means that there is no difference between groups and any difference found is due to chance. When the value is close to zero, it indicates that the difference discovered is unlikely to be due to chance (Dahiru, 2008).

P value  $>0.01$  which means there is no significant difference between the means of the two groups regarding WPM and the length of pauses. Therefore, the participants of both the control and the experimental groups are of the same level. The result is demonstrated as follows:

**Table 5**  
*The Result of the Independent Samples T-Test for WPM in the Taken Pretest*

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference		
						One-Sided p	Two-Sided p				
Pretest grades (WPM) for both control and experimental groups	Equal variances assumed	.165	.687	.973	42	.168	.336	4.31818	4.43894	-4.63995	13.27632
	Equal variances not assumed			.973	41.948	.168	.336	4.31818	4.43894	-4.64028	13.27665

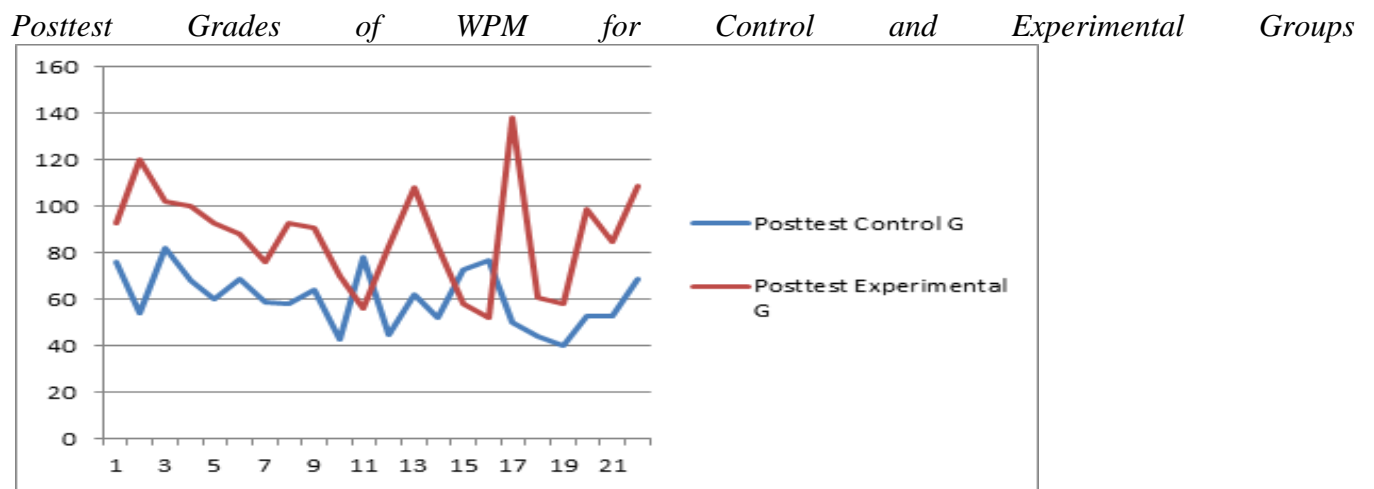
**Table 6**  
*The Result of the Independent Samples T-Test for Length of Pauses in the Taken Pretest*

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference		
						One-Sided p	Two-Sided p				
Pretest grades (length of pauses) for both control and experimental groups	Equal variances assumed	.227	.636	-1.055	42	.149	.298	-1.43545	1.36120	-4.18247	1.31156
	Equal variances not assumed			-1.055	41.226	.149	.298	-1.43545	1.36120	-4.18400	1.31309

## II. Posttests grades (WPM/ Length of pauses) for the control and the experimental groups

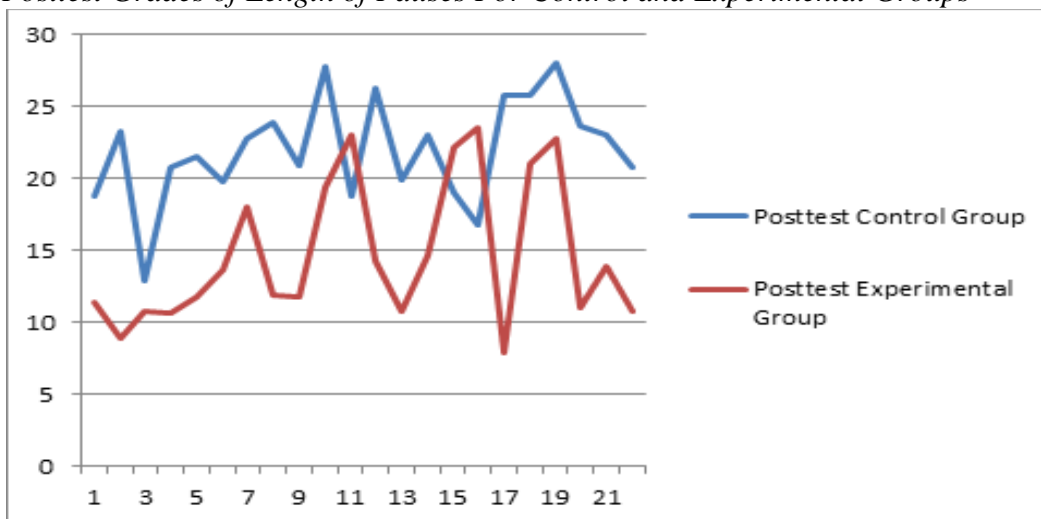
To study H1 which supposes that the 4/3/2 activity has an effect on improving ESL students' fluency, a comparison was made between posttests of both the control and the experimental group. As mentioned before, the test was given to the control group, 22 students, who applied a traditional technique, and the experimental group, 22 students, who employed the 4/3/2 technique. As a matter of fact, participants of the experimental group generate more words per minute than those of the control group as shown in the figure below (Figure 2). The grades of the experimental group participants are higher when compared to those of the control group.

**Figure 2**



**Figure 3**

*Posttest Grades of Length of Pauses For Control and Experimental Groups*



It can be concluded from Figure 3 that participants of the experimental group paused less than those of the control group while trying to speak about the chosen topic.

There's a clear difference between the grades of the two groups regarding the WPM and the length of pauses. When talking statistics, the first thing to do is find the mean. The tables below show a comparison between the mean of the control group and the mean of the experimental group regarding the WPM and the length of pauses in the taken post-test.

**Table 7***The Result of the Mean in Posttest Grades (WPM)*

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest grades (WPM) for both control and experimental groups	Control Group	22	60.4091	12.41604	2.64711
	Experimental Group	22	87.0909	22.11207	4.71431

As displayed in the table above, the mean score of students' WPM in the control group is 60.4091 and the mean score of students' WPM in the experimental group is 87.0909. It can be concluded that the mean score of students in the experimental group is higher than the mean score of students in the control group. Therefore, it can be assumed that the participants of the experimental group produced more words per minute than the participants of the control group.

Because of the significant difference between means, and because the mean of the experimental group who implemented the 4/3/2 technique is bigger than the mean of the control group who applied a traditional technique, it can be concluded that H<sub>1</sub> which supposes that the 4/3/2 activity has an effect on improving ESL students' fluency is validated.

**Table 8***The Result of the Mean in Posttest Grades (Length of Pauses)*

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest grades (length of pauses) for both control and experimental groups	Control Group	22	21.9500	3.66216	.78077
	Experimental Group	22	14.7255	5.04851	1.07635

As shown in the above table, the mean score of students' length of pauses in the control group is 21.9500 and the mean score of students' length of pauses in the experimental group is 14.7255. It can be concluded that the mean score of students in the experimental group is less than the mean score of students in the control

group. Therefore, it can be assumed that the participants of the experimental group paused less than the participants of the control group.

P value = 0.00 < 0.05 which means there is a significant difference between the means of the two groups. Therefore, H<sub>0</sub> is rejected and H<sub>1</sub> is accepted. The result is demonstrated as follow:

**Table 9**  
*The Result of the Independent Samples T-Test for WPM in the Taken Posttest*

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Posttest grades (WPM) for both control and experimental groups	Equal variances assumed	4.611	.038	-4.935	42	<.001	<.001	-26.68182	5.40665	37.59289	15.77075
	Equal variances not assumed			-4.935	33.045	<.001	<.001	-26.68182	5.40665	37.68117	15.68247



**Table 10**

*The Result of the Independent Samples T-Test for Length of Pauses in the Taken Posttest*

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	Lower	Upper
						One-Sided p	Two-Sided p				
Posttest grades (length of pauses) for both control and experimental groups	Equal variances assumed	3.663	.062	5.433	42	<.001	<.001	7.22455	1.32971	4.54108	9.90801
	Equal variances not assumed			5.433	38.308	<.001	<.001	7.22455	1.32971	4.53340	9.91569

**Pre and Post-tests grades (WPM/ Length of pauses) for the control group**

To validate the hypotheses more, a comparison was made between the means of the pre and post-tests for the control group regarding WPM and the length of pauses. The results are displayed in the tables below:

**Table 11**

*The Result of the Mean in Pre and Post-tests Grades (WPM) for the Control Group*

	Mean	N	Std. Deviation	Std. Error Mean
Pretest grades (WPM) for the control group	58.2727	22	14.97993	3.19373
Posttest grades (WPM) for the control group	60.4091	22	12.41604	2.64711

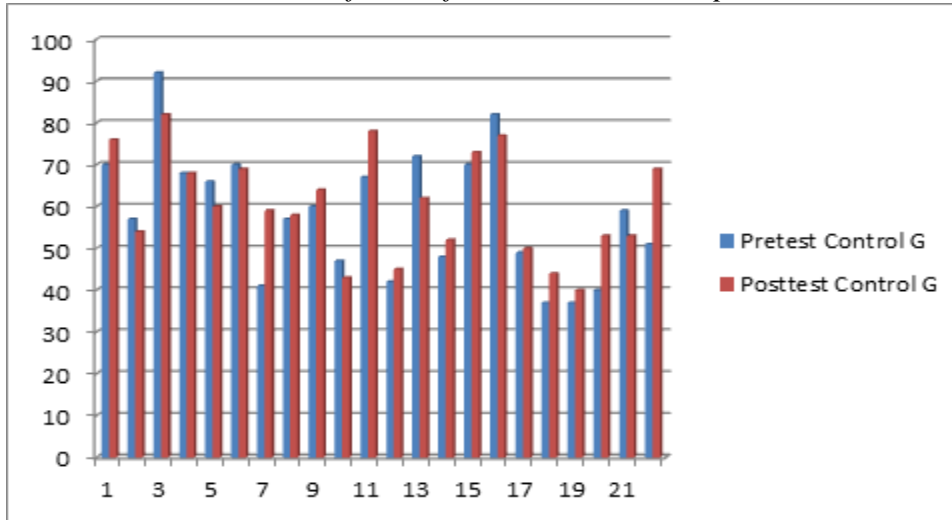
**Table 12**

*The Result of the Mean in Pre and Post-tests Grades (Length of Pauses) for the Control Group*

	Mean	N	Std. Deviation	Std. Error Mean
Pretest grades (length of pauses) for the control group	22.3509	22	4.19385	.89413
Posttest grades (length of pauses) for the control group	21.9500	22	3.66216	.78077

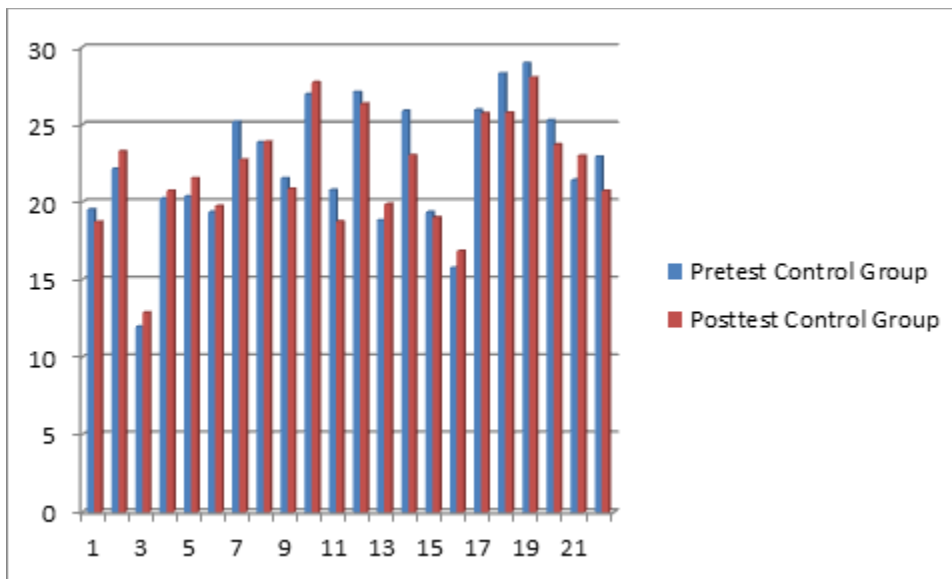
From the tables it can be concluded that there is no significant difference between the mean score of the pretest and that of the posttest of the control group for both WPM and the length of pauses. Therefore, it can be assumed that the participants' level in the control group remained the same.

**Figure 4**  
*Pre and Post-test Grades of WPM for the Control Group*



It can be concluded from Figure 4 that the level of the control group participants remained the same with no significant difference between the number of words produced per minute in both the pre and post-test. Similarly, when comparing the length of pauses (Figure 5) between both tests, no significant difference was observed.

**Figure 5** *Pre and Post-test Grades of the Length of Pauses for the Control Group*



**Table 13**

*The Result of the Paired Samples T-Test for the Control Group (WPM)*

	Paired Differences					t	df	Significance	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
				Lower	Upper				
Pretest-Posttest grades (WPM) for the control group	-2.13636	7.88788	1.68170	-5.63365	1.36093	-1.270	21	.109	.218

**Table 14**

*The Result of the Paired Samples T-Test for the Control Group (Length of Pauses)*

	Paired Differences					t	df	Significance	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
				Lower	Upper				
Pretest-Posttest grades (length of pauses) for the control group	.40091	1.38317	.29489	-.21236	1.01417	1.360	21	.094	.188

When comparing the pretest and posttest of the control group, the P value > 0.05; which means there is no significant difference between the means of the control groups' pre and post-tests regarding WPM and the length of pauses.

**IV. Pre and Post-tests grades (WPM/ Length of pauses) for the experimental group**

To validate the hypotheses more, a comparison was made between the means of the pre and post-tests for the experimental group regarding WPM and the length of pauses. The results are displayed in the tables below:

**Table 15**

*The Result of the Mean in Pre and Post-tests Grades (WPM) for the Experimental Group*

	Mean	N	Std. Deviation	Std. Error Mean
Pretest grades (WPM) for the experimental group	53.9545	22	14.46005	3.08289
Posttest grades (WPM) for the experimental group	87.0909	22	22.11207	4.71431

**Table 16**

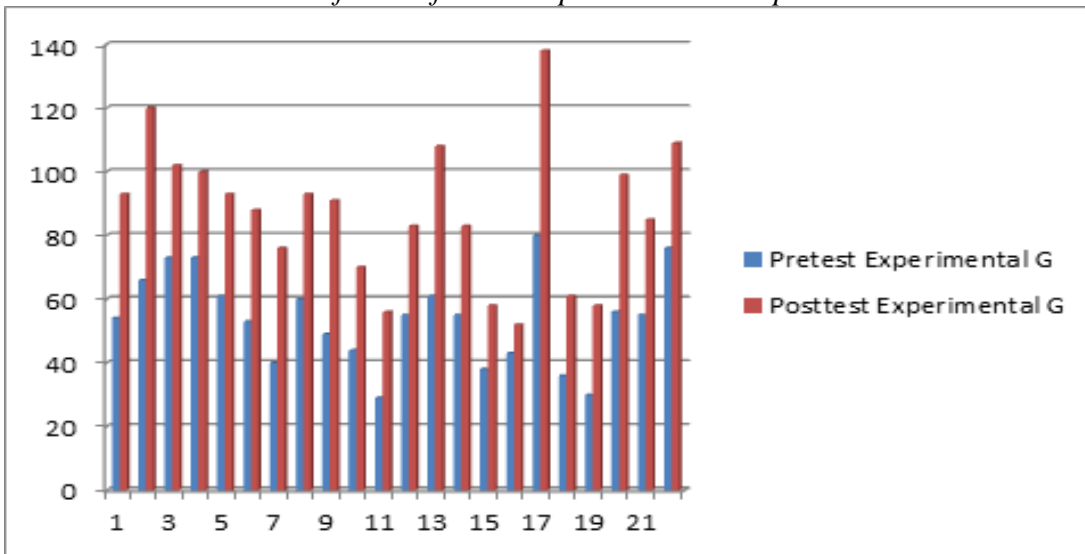
*The Result of the Mean in Pre and Post-tests Grades (Length of Pauses) for the Experimental Group*

	Mean	N	Std. Deviation	Std. Error Mean
Pretest grades (length of pauses) for the experimental group	23.7864	22	4.81401	1.02635
Posttest grades (length of pauses) for the experimental group	14.7255	22	5.04851	1.07635

From the tables it can be concluded that there is a significant difference between the mean score of the pretest and that of the posttest of the experimental group for both WPM and the length of pauses. Hence, it can be assumed that the participants of the experimental group produced more words per minute and paused less than the participants of the control group.

**Figure 6**

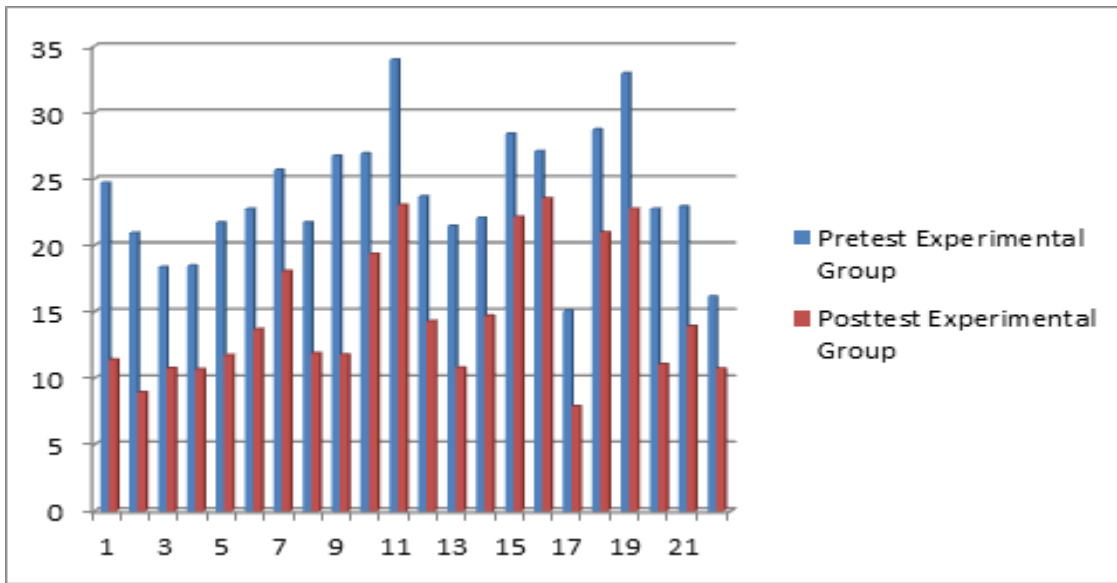
*Pre and Post-test Grades of WPM for the Experimental Group*



It can be concluded from Figure 6 that the number of words produced, by the participants of the experimental group, per minute increased with a significant difference between the pre and post-test. Similarly, when comparing the length of pauses(Figure 5) between both tests, a clear significant difference was observed. The participants of this group paused less during the posttest. Hence, it can be concluded that the length of pauses in the chosen posttest decreased significantly (Figure 7).

**Figure 7**

*Pre and Post-test Grades of Length of Pauses for the Experimental Group*



	Paired Differences					t	df	Significance	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
				Lower	Upper				
Pretest-Posttest grades (WPM) for the experimental group	33.1363	10.9600	2.3367	-37.9957	-28.2769	14.181	21	<.001	<.001

**Table 18**

*The Result of the Paired Samples T-Test for the Experimental Group (Length of Pauses)*

	Paired Differences					t	df	Significance	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
				Lower	Upper				
Pretest-Posttest grades (length of pauses) for the experimental group	9.0609	2.6326	.5612	7.8936	10.2281	16.144	21	<.001	<.001

When comparing the pretest and posttest of the experimental group, the P value < 0.05; which means there is a significant difference between the means of the experimental groups’ pre and post-tests regarding WPM and the length of pauses. Because of the significant difference between means, and because the mean of the experimental group’s posttest that implemented the 4/3/2 technique is bigger than the mean of this same group’s pretest, it can be concluded that H<sub>1</sub> which supposes that the 4/3/2 activity has an effect on improving ESL students’ fluency is validated.

**Discussion**

**Answering Research Questions**

*Research question 1*

By looking at the teachers’ responses it can be concluded that there are many problems that led to students’ speaking difficulties including the low self-confidence, the Arabic translation, and the lack of vocabulary, ideas, and grammatical rules (Table 4). These problems were mentioned earlier in the literature. Widayanti et al. (2020) stated that the fear of being ridiculed by peers was the main problem. N.W.S.C (2021) mentioned that anxiety prevented learners from speaking with their classmates. Another issue, according to Jassem, Z. A., and Jassem, J. A. (1997), is the nature of the theme, because most subjects are difficult to understand and grasp. Moreover, Thomson (2017) stated that students’ use of English, in ESL classrooms, is restricted to the class which makes it difficult for them to improve their fluency level.

It is also empirical to highlight that some teachers drew connections between numbers of factors on how to improve students' speaking skill. Most teachers believed that integrating speaking with the other skills would help students become more fluent in a second language, for this integration challenge students to speak fluently while exposing them to real-life scenarios. The results of the interview also showed that students' language proficiency and fluency may increase when they practice speaking in front of others or in a group. Most teachers also believed that incorporating daily speaking activities into the curriculum would assist in enhancing students speaking skills.

With this end in mind, the researcher found that the results of this study and other studies in the same field were almost similar. Furthermore, despite their level of fluency, students seem to be more comfortable while speaking with partners than they are in the classroom as a whole. If we sum up the results revealed by previous studies and the interview in this study, we can conclude that students need to learn in a comfortable positive environment in order for them to speak without hesitations. In addition to choosing interesting and enjoyable topics that encourage them to speak fluently.

#### *Research question 2*

Two hypotheses were written to answer this question.

H1: If the 4/3/2 Activity is applied, ESL students' fluency will not improve.

H1: If the 4/3/2 Activity is applied, ESL students' fluency will improve.

Many studies have been made regarding this topic and all of them had similar results. Matthew Ryczek (2012), Nel de Jong and Charles A. Perfetti (2011), Yingjie I. J. Yang (2014), Yunita Indriyani (2013), and Yufrizal (2018) had shown that the 4/3/2 technique has a positive impact on enhancing learners' speaking fluency in ESL classrooms. According to this study, the 4/3/2 helped students become more fluent speakers six weeks after they started using it. The most significant effect this technique had on fluency was the number of words produced per minute. While displaying comparable levels of fluency on the pre-test, the experimental group demonstrated considerably higher WPM than the control group when taking the identical test after six weeks. Moreover, students also reduced the length of pauses. The results of this research corroborate earlier studies that found that teaching students to apply the 4/3/2 technique improves their speaking proficiency level.

According to the results obtained from the pretest for both the experimental and the control group in chapter 4, the t-test showed no significant difference between the means of the two groups regarding WPM and the length of pauses with a P value  $>0.01$  (Table 7 and Table 8). Hence fourth grade students of sections A and



B are of the same level. It should be noted that students of both groups were taught by the same teacher and using the same text book. On the other hand, the comparison that was made between posttests of both the control and the experimental group, led to the conclusion that  $H_0$  which supposes that the 4/3/2 activity has an effect on improving ESL students' fluency is validated. As a matter of fact,  $P \text{ value} = 0.00 < 0.05$  (Table 11 and Table 12) which means there is a significant difference between the means of the two groups. Therefore,  $H_0$  is rejected and  $H_1$  is accepted. The results proved that the participants of the experimental group paused less and produced significantly more words per minute than those of the control group. Thus, the 4/3/2 has an effect on improving ESL students' fluency level.

After comparing the grades of the pre and post-tests for the control group, the result revealed that there was no significant difference between the means of both tests (Table 13 and Table 14). Hence, it can be concluded that students' fluency level remained the same while applying the traditional technique. The results showed that students' WPM did not significantly improve; they also did not show any reduction in the length of pauses while speaking about the chosen topic (Figure 4 and Figure 5). On the contrary, after comparing the grades of the pre and post tests for the experimental group, the result revealed that there was a significant difference between the means of both tests (Table 17 and Table 18). Hence, it can be concluded that students' fluency level was improved after the implementation of the 4/3/2 technique. The results revealed that students of this group produced significantly more words per minute and paused less while trying to speak about the chosen topic (Figure 6 and Figure 7).

Hence, the findings of this study come hand in hand with the results of previously mentioned researchers outside Lebanon, therefore a conclusion can be made that the 4/3/2 technique has an effect on improving students' fluency level. This implies that the null hypothesis  $H_0$  is rejected and that the alternative hypothesis  $H_1$  is accepted. As a result, the answer to the second research question is that the 4/3/2 Technique has a positive effect on Lebanese ESL learners' fluency in grade four.

## Conclusion

By summing up the results from previous studies and the interview results, it can be concluded that a lot of factors can contribute to students' fluency problems. Even when students have an excellent understanding of how to employ language, they may still have difficulty speaking fluently due to the lack of confidence, vocabulary, and ideas and the fear of being ridiculed by others.

In light of the results, fluency in speaking is increased by the implementation of the 4/3/2 approach. The study's findings revealed that students, in the experimental group, delivered more words on the given posttest. The data also revealed that the number of words per minute increased in that group and the length of pauses

continued to decline. Creating chances for students to speak a second language in an enjoyable and relaxed way, this strategy can help teachers overcome difficulties and improve their students' speaking abilities. The purpose of this study was to examine the effectiveness of the 4/3/2 technique on improving students' speaking proficiency. Hence, while using this technique students felt less stressed while learning and were more comfortable when speaking; their ability to improve their speaking skills was achievable. The findings reported in this study mainly support the importance of implementing the 4/3/2 technique while teaching speaking in schools.

### **Limitations and Further Studies**

This study has a few notable limitations. Firstly, the small classroom size created discomfort for students during speaking sessions due to the close proximity, impacting the overall experience. Additionally, the six-week intervention period may be insufficient for a comprehensive measurement of fluency improvement in speaking, considering the complexity of developing this skill. While the study demonstrated the effectiveness of the 4/3/2 technique in enhancing speaking fluency within the specific context of two classrooms in a private school in Saida, Lebanon, generalizability to other settings is uncertain. Future studies could explore the applicability and impact of the 4/3/2 technique across various educational levels, including intermediate and secondary cycles, and assess potential differences between private and public schools in terms of speaking proficiency. Furthermore, investigating the technique's suitability for university students and its adaptability in diverse settings, such as reading aloud contexts, would contribute to a more comprehensive understanding of its potential benefits.

### **Recommendations**

To effectively implement the 4/3/2 strategy, educators should begin by clearly articulating its purpose, emphasizing its role in enhancing speaking fluency, accuracy, and confidence for learners. Clear and detailed instructions, along with practical examples, should be provided during the introduction of the strategy to ensure a thorough understanding. Subsequently, ample practice opportunities, such as pair or group activities and role-plays, should be integrated into the learning process. Continuous feedback, both positive and constructive, is crucial to guide learners in recognizing areas for improvement. Additionally, fostering a culture of self-reflection among learners, encouraging them to evaluate their fluency, accuracy, and confidence, empowers them to take ownership of their language development, fostering a proactive learning approach.

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## PHYSICO-CHEMICAL PROPERTIES OF SOIL IN A PROTECTED AREA NETWORK (CHURDHAR WILDLIFE SANCTUARY IN WESTERN HIMALAYA, INDIA)

Usha Thakur\*

\*Department of Botany, MCM DAV College Kangra-176001 (Himachal Pradesh)

\*[thakurusha994@gmail.com](mailto:thakurusha994@gmail.com)

### Abstract

The present work deals the physico-chemical properties of soil along an altitudinal gradient in Churdhar Wildlife Sanctuary (CWS), Western Himalaya, India. CWS is one of the protected areas of Western Himalaya located in the state of Himachal Pradesh and covers a great range of altitude from 1900-3647 m. A total five forest sites were selected with variations in the altitudes and aspects. The composite soil samples were collected from two depth viz., 0-15 cm and 15-30 cm. The soils of the area mainly falls into two textural classes i.e. clay-loam and sandy-loam whereas soil colour varies from yellowish brown to dark brown. Water holding capacity showed significant positive correlation with moisture content whereas nitrogen exhibited a positive correlation with organic carbon. The pH of soil decreases with increase in the altitudes.

**Key words:** Heterogeneous Environment, Resilience, Biogeochemical Cycle. Textural Triangle

## **ANALYZING THE IMPACT OF GLOBALIZATION ON ECONOMIC INEQUALITY ACROSS DEVELOPED AND DEVELOPING NATIONS**

**Dr. Rajiya Sultan**  
**Assistant Professor**  
**Department of Public Administration**  
**HPU**

### **Abstract**

This paper explores how globalization has influenced economic inequality in both developed and developing countries. Globalization marked by increased trade, technology, and movement of capital and people has brought significant changes to economies around the world. While it has helped some countries grow economically, it has also contributed to widening income gaps both within and between nations. In developed countries, globalization has often led to job losses in certain industries, wage stagnation for low-skilled workers, and wealth concentration among the wealthy. In contrast, developing countries have experienced both positive and negative impacts, with some benefiting from new job opportunities and foreign investment, while others face challenges like low wages and exploitation. This paper examines how different regions have been affected by globalization and investigates the role of policies, education, and labor markets in shaping the outcomes. By comparing the experiences of developed and developing nations, the paper aims to provide a clearer understanding of how globalization shapes economic inequality and offers insights into how countries can manage its effects to promote fairer economic growth.

## EXPLORING THE ROLE OF RAFTING AND WHITEWATER KAYAKING IN DEVELOPING EMPATHY AND EMOTIONAL SELF-REGULATION AMONG ADULTS

Akshay Kumar<sup>1</sup>, Dr Manohar Lal<sup>2</sup>, Dr Neelam Kumari<sup>3</sup>, Sumit Kumar<sup>1</sup> and Diksha Sharma<sup>1</sup>

1. Research Scholar, Department of Physical Education
  2. Associate Professor, Department of Physical Education
  3. Assistant Professor, Department of Biosciences  
Himachal Pradesh University, Shimla, India
- \*Correspondence author email: [ak803346@gmail.com](mailto:ak803346@gmail.com)*

This paper attempts to examine how rafting and white-water kayaking can be applied towards the establishment of empathy and emotional self-regulation in an adult. Such adventure activities as claimed to enhance proficiency in teamwork and versatility were rated concerning their psychological impact using quantitative tools and techniques. A total of 150 participants, aged 16 to 25 years, undertook structured programs while rafting and white-water kayaking, with data collection done at the ABVIMAS Centre in Himachal Pradesh. For quantitative analysis, the t-test (paired method) was used for the Toronto Empathy Questionnaire and Difficulties in Emotion Regulation Scale. The findings pointed to an increase in empathy levels ( $p < 0.05$ ) of the participants showing enhanced levels of emotional tune and appreciation of others. As in self-regulation, there were improvements in empathy scores related to emotional regulation, especially in the impulsivity and stress domains. The discoveries related to increased interpersonal sensitivity, including the drive behind the desire to comprehend people and reach empathy, together with impulse control and stress subjects. The results imply that rafting and white-water kayaking can be used as effective means in therapeutic, educational, and organizational contexts, and that is why further investigation of the impact after a certain period and the possibilities of applying this to different participants is required.

**Keywords:** Adventure Activities, Rafting, White-water Kayaking, Empathy, Emotional Self-regulation

**PAYLATER SYSTEM ANALYSIS ON IMPULSE BUYING BEHAVIOR OF STUDENTS IN THE DIGITAL ERA FROM AN ISLAMIC PERSPECTIVE CASE STUDY OF STUDENTS UIN K.H. ABDURRAHMAN WAHID PEKALONGAN**

**Salsabila Natasya WIBOWO**

Faculty of Islamic Economic and Business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia  
SalsabilaNatasyaWibowo@mhs.uingusdur.ac.id

**Hendri Hermawan ADINUGRAHA**

Faculty of Islamic Economic and Business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

**Abstract**

The study's goal is to examine the influence of paylater payment systems on student impulsive purchase behavior in the digital era, with a particular emphasis on the Islamic viewpoint. Increased usage of technology and electronic payment methods, such as paylaters, has sped up online purchasing transactions, which can influence customer behavior, especially impulse purchases. The study collects data from students who utilize the paylater system to perform online retail transactions using qualitative and quantitative research approaches. Furthermore, the study was conducted in accordance with Islamic economic principles, which promote fair, honest, and responsible transactions.

According to the findings of the study, the usage of paylater systems can enhance student impulsive purchase behavior. Transactional simplicity and enticing discount offers might lead to hasty purchase decisions. However, it was discovered that several actions in the paylater system may be inconsistent with Islamic economic ethical standards. This study provides in-depth insight into how paylater payment systems impact student spending behavior and serves as a foundation for developing policy recommendations to encourage the establishment of payment systems based on Islamic principles. In the context of an ever-expanding digital economy, it is critical to encourage responsible consumerism and moral values.

Keyword : PayLater Features, Student Consumptive Behavior, Impulse Buying

## THE ROLE OF DIGITALIZATION IN TRANSFORMING THE INDIAN LEGAL SYSTEM: A CITIZEN-CENTRIC APPROACH

**Dr. Aastha Agnihotri**

**Assistant Professor Law, University Institute of Legal Studies,  
Himachal Pradesh University, Shimla (India) 171005**

**ORCID No. 0009-0002-6350-8680**

### **Abstract**

India's legal system has undergone significant transformations in recent years to address emerging societal needs and ensure justice for all. One notable reform is the introduction of **Digital Courts and E-Filing** as part of the Digital India initiative. This modernization aims to reduce delays, enhance transparency, and make the judicial system more accessible to citizens. Despite these advancements, challenges such as technological barriers, lack of awareness, and infrastructure gaps persist. This study evaluates the impact of digital reforms on the Indian legal system, focusing on their effectiveness, accessibility, and challenges. The research adopts a mixed-method approach, analyzing secondary data from government reports and legal databases, alongside primary data gathered through interviews with legal professionals, court staff, and litigants. Key areas of focus include the adoption rate of e-filing systems, user experiences, and the overall efficiency of digital courts. The findings reveal that digital reforms have reduced case pendency in several courts, improved ease of filing cases, and enhanced accessibility, particularly in remote areas. However, issues such as uneven implementation across states, lack of technical skills among stakeholders, and inadequate internet connectivity limit the full potential of these reforms. The study concludes that while digitalization has positively impacted the Indian legal system, a comprehensive strategy involving training, infrastructure development, and public awareness is crucial for long-term success. These reforms have the potential to make the legal system more citizen-centric and efficient, bridging the gap between justice delivery and modern technology.

**Keywords:** Indian legal system, digital courts, e-filing, judicial reforms, accessibility, technology in law

## HANDICRAFTS AS A LIVELIHOOD OPTION: EMPOWERING TRIBAL WOMEN THROUGH SKILL DEVELOPMENT

**Dr. Vijay Singh**

**Assistant Professor, Public Administration,  
Centre for Distance and Online Education,  
Himachal Pradesh University, Shimla (India) 171005**

**E-mail: [com.vvs@gmail.com](mailto:com.vvs@gmail.com)**

**ORCID No. 0000-0002-2265-8888**

### **Abstract**

Handicrafts have long been a significant part of India's cultural heritage and a source of livelihood for tribal communities. For tribal women, handicrafts offer a unique opportunity for economic empowerment, allowing them to earn a living while preserving traditional skills. However, these women often face challenges such as lack of access to markets, limited skill development opportunities, and inadequate financial support. This study explores how skill development initiatives can empower tribal women by enhancing their capabilities in handicraft production and improving their livelihood opportunities. The research employs a mixed-method approach, combining surveys and interviews with tribal women engaged in handicrafts across selected regions. Additionally, data from government and non-governmental skill development programs were analyzed to understand their impact on the participants. Key metrics such as income generation, market access, and self-reliance were examined. The findings indicate that skill development programs have significantly improved the technical and entrepreneurial skills of tribal women, enabling them to produce high-quality handicrafts and access wider markets. Participants reported increased income, enhanced confidence, and greater financial independence. However, challenges such as insufficient awareness about these programs, limited market linkages, and competition from machine-made goods remain barriers to success. The study concludes that skill development in handicrafts is a powerful tool for empowering tribal women. Strengthening training programs, ensuring better market access, and promoting tribal handicrafts as sustainable and culturally rich products can further enhance their livelihoods.

**Keywords:** tribal women, handicrafts, skill development, economic empowerment, livelihood opportunities, traditional crafts

## IMPACT OF PUBLIC HEALTH PROGRAMS ON TRIBAL COMMUNITIES: A STUDY OF ACCESSIBILITY AND EFFECTIVENESS

**Dr. Sapna Devi**

**Former Research Scholar, Department of Public Administration,  
Himachal Pradesh University, Shimla (India), 171005  
ORCID No. 0009-0007-4559-9167**

### **Abstract**

Public health programs play a vital role in improving the well-being of tribal communities, which often face challenges such as poor healthcare access, malnutrition, and high disease prevalence. Despite numerous government initiatives aimed at addressing these issues, tribal communities frequently encounter barriers in accessing healthcare services. This study examines the impact of public health programs on tribal communities in India, focusing on their accessibility and effectiveness.

The research uses a mixed-method approach, combining field surveys in selected tribal areas with interviews of healthcare workers, community leaders, and program beneficiaries. Quantitative data was gathered on the reach of major public health programs, while qualitative insights helped understand the community's perspectives on these initiatives.

The findings reveal significant gaps in healthcare accessibility for tribal populations. While programs like **National Health Mission** and **Rashtriya Bal Swasthya Karyakram** have improved awareness and immunization rates, challenges such as inadequate healthcare infrastructure, lack of skilled personnel, and cultural disconnects limit their effectiveness. The study also highlights successful models where community participation and culturally sensitive interventions have enhanced program outcomes.

The research concludes that public health programs have positively impacted tribal communities but need tailored strategies to address their unique challenges. Recommendations include improving infrastructure in remote areas, increasing the deployment of tribal healthcare workers, and fostering community involvement to ensure sustainable health outcomes.

**Keywords:** tribal health, public health programs, healthcare access, program effectiveness, tribal communities, healthcare challenges



## PLANNING FOR THE DEVELOPMENT OF ENDURANCE QUALITY, A FUNDAMENTAL CONDITION FOR IMPROVING THE CARDIO-RESPIRATORY SYSTEM IN FOOTBALL PLAYERS

Assoc. Prof. Dr. K.Vrenjo<sup>1\*</sup> Msc. Migen Memelli<sup>2</sup>

ORCID: <https://orcid.org/0000-0003-2817-4355>

Sports University of Tirana, Faculty of Movement Sciences, Department of Education and Health, Tirana, Albania;

\*Corresponding author; kvrenjo@ust.edu.al;k

### Abstract

This study focuses on the "running" component in football, emphasizing the importance that football players must build endurance for the runs they perform during training sessions, drilling with or without the ball with a high intensity of certain loads preparing for official matches and other types of matches. Poor running technique can be associated with serious impacts on the work during the preparatory phase where the study was carried out coincides with aerobic power, so successive tests such as the Gacon test and the description of the distances: 1200-800-400 meters were applied. We measured the heart rate and maximum speed by using the GPS system (SportBeeper Pro) over a 10-day period of eighteen footballers or 75% of the players of Team X, a team that plays in the Albanian national super league.

The findings suggest that the selected tests should be repeated over time and not only at the beginning of the season or during the mini-phase period that is carried out in January of each year, since in this way it could be applied the grouping of players depending on their running speed. It was also concluded that athletes with a higher VO<sub>2</sub>max (more phases performed) have more impacts than athletes with a lower VO<sub>2</sub>max.

**Keywords:** Running, footballer, HR max, maximum speed, VO<sub>2</sub>max, GPS

### INTRODUCTION

Through this study we want to raise awareness among football coaches and athletic trainers that football players need to build endurance for running during training sessions with or without the ball at a high intensity of certain loads in order to face official and friendly matches they play at. Aerobic endurance and power are the two main elements that are related to maximum oxygen consumption (VO<sub>2</sub> max), so the central component (heart) must pump a considerable amount of blood to the peripheral components (muscles) in order to pump as much blood as possible to the muscles. Increasing lung capacity is another important aspect for football players to increase their performance. The greater the lung capacity, the more oxygen you can take in and perform better. The way this is achieved: interval training (work-rest), i.e. alternating periods of rest with high-intensity work, helping to increase lung capacity for greater endurance. For this reason, during the preparatory phase, football players perform several tests to create aerobic power and for our team the Gacon test<sup>1</sup> was applied (as an intermediate test and which gives us the opportunity to measure the Maximum Aerobic Speed V.A.M. and the level of VO<sub>2</sub>max. Immediately after it, the players performed the description of the distances: 1200-800-400 meters where we measured the pulse and maximum speed. Also, another purpose for which these tests were chosen one after the other is to apply the division of the running groups during the preparatory period where we did this study with the aim that the 3 groups had within themselves, players with the same running speed in order not to create large distances in relation

to individuals who run faster or vice versa slower, in other words to not break the running speed and rhythm where in the worst case we would also have a pulse game from one player to another or from one group to another where the players would not receive the appropriate loads during the preparatory period.

Poor running technique can be associated with severe impacts, whereas excellent running technique becomes essential to soften the impact with the ground and prevent serious trauma to tendons, ligaments and joints<sup>2</sup>

## **MATERIALS AND METHODS**

This study was conducted with 18 male footballers of Team X on the field during training sessions and friendly matches during the preparatory phase regarding cardio-respiratory and muscular performance. During this experiment, the GPS system was used, over a 10-day period, including vascular system resistance, heart rate and blood pressure. The experimental period took place exactly on June 10, 2023, at a time when the Team was preparing for the European Cups, the Qualification Phase and further on to be ready with preparations for the new season of the National Championship and was repeated on January 7, 2023 after returning from the winter break.

In the first phase, it was determined that 18 players of the team would be tested, removing 3 of them who are goalkeepers and 4 players who have been late in arriving from the U-19 Youth team.

The athletes performed the Gacon<sup>3</sup> test. It is a maximal progressive test. The participants, after a short fifteen-minute warm-up, were divided into three groups of six. The players started from the designated point (fixed point) and within 45 seconds had to run 125 meters; in the recovery of 15 seconds, they had to go to the next starting point, which was 6.25 meters from the arrival point. After cooling down, they returned to the original starting point, called the fixed point, traveling 131.5 meters in 45 seconds, and so on, for the following phases. The participants were personally observed by an instructor during the execution of the test through the SportBeeper Pro device<sup>4</sup>.

The test maintains the classic increase of 0.5 km / h per minute, the initial speed is 10 km / h in progression, increasing the path by 6.25 m, also increasing by 0.5 km / h the running speed. The test ends when the athlete is no longer able to complete the course for 45 seconds. The test can estimate the VO<sub>2</sub>max value by multiplying the speed of the fraction by three. A VO<sub>2</sub>max value is associated with each phase as shown in the table below.

Immediately after the Gacon test, in the second step, where the division of the running groups into 3 groups that had within themselves, players with the same running speed, with the help of SportBeeper Pro we carried out the distance tests: 1200-800-400 meters.

SportBeeper Pro is a device designed to meet all the requirements of physical preparation and specific tests for football teams. This device helps through a signal when the distance that the football players must cover during the tests begins and ends.

The work during the preparatory phase where the study was conducted coincides with Aerobic Power, where the distances in which the players have covered are: 1200-800-400 meters. This test is a part only of our fitness test<sup>5</sup>.

The distance of 1200 meters has a running time of 4'15", with a rest time between repetitions of 2-3 minutes depending on the condition of the players. The players have performed this work divided into 3 sets of 3 repetitions, where between the

sets a rest time of 6 minutes is given until the next series, time where the players must recover from the high pulse rate to return it to its initial state.

The distance of 800 meters has a running time of 2'40", with a rest time between repetitions of 1.5-2 minutes variable, divided into 3 sets of 4 repetitions. The rest time between sets is given 4 minutes.

While the 400-meter distance has a working time of 80", with a rest time between repetitions of 60"-70" variable, divided into 3 sets of 6 repetitions each. The rest time given between sets is 2-3 minutes.

## RESULTS

### General Characteristics of the Sample

- ❖ The total population included in our study is 18 individuals.
- ❖ The average age of the entire sample is 24.12 years
- ❖ Average BMI 23.6 kg/m<sup>2</sup>
- ❖ Average Height 1.83 m

**Table 1: Summary of data of the football players**

Player	Age (years)	Weight (kg)	Height (m)	BMI(kg/m <sup>2</sup> )
1	31	81	1.86	23.41
2	27	78	1.82	23.54
3	26	76	1.80	23.45
4	22	79	1.82	23.85
5	23	79	1.83	23.6
6	19	83	1.88	23.5
7	25	80	1.80	24.7
8	22	79	1.79	24.65
9	19	79	1.81	24.11
10	28	78	1.84	23.04
11	21	77	1.80	23.76
12	24	83	1.83	23.8
13	23	77	1.82	23.24
14	26	79	1.83	23.6
15	24	81	1.86	23.41
16	25	80	1.86	23.12
17	22	77	1.84	22.74
18	23	82	1.87	23.45

**Table 2:Results from the test ‘Gacon’ for each athlete**

Player	Fraction number	Fraction speed	Fraction distance	VO2 Max
1	18	18.5	231.25	56
2	21	20	250	60
3	19	19	237.5	57
4	17	18	225	54
5	19	19	237.5	57
6	19	19	237.5	57
7	20	19.5	243.75	59
8	20	19.5	243.75	59
9	21	20	250	60
10	17	18	225	54
11	16	17.5	218.75	53
12	21	20	250	60
13	23	21	262.5	63
14	21	20	250	60
15	21	20	250	60
16	17	18	225	54
17	17	18	225	54
18	20	19.5	243.75	59

**Table 3:Comparison data for group 1 /1200m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
1	1200	1200	0	4’15’	4’15’	0	175	175	0	14 Km/h	14 Km/h	0
2	1200	1200	0	4’15’	4’15”	0	174	174	0	14 .5Km/h	14 .5Km/h	0
3	1200	1200	0	4’15’	4’15’	0	175	175	0	14 .5Km/h	14 .5Km/h	0
4	1200	1200	0	4’15’	4’15’	0	173	173	0	14 Km/h	14 Km/h	0
5	1200	1200	0	4’15’	4’15’	0	175	175	0	14 Km/h	14 Km/h	0
6	1200	1200	0	4’15’	4’15’	0	175	175	0	14 .5Km/h	14 .5Km/h	0

**Table 4: Comparison data for group 2 /1200m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
7	1200	1200	0	4'15"	4'15"	0	175	175	0	14 Km/h	14 Km/h	0
8	1200	1200	0	4'14"	4'14"	0	174	174	0	14.5Km/h	14.5Km/h	0
9	1200	1200	0	4'14"	4'14"	0	175	175	0	14.5Km/h	14.5Km/h	0
10	1200	1200	0	4'14"	4'14"	0	173	173	0	14 Km/h	14 Km/h	0
11	1200	1200	0	4'14"	4'14"	0	175	175	0	14 Km/h	14 Km/h	0
12	1200	1200	0	4'15"	4'15"	0	175	175	0	14.5Km/h	14.5Km/h	0

**Table 5: Comparison data for group 3 /1200m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
13	1200	1200	0	4'15"	4'15"	0	175	175	0	14 Km/h	14 Km/h	0
14	1200	1200	0	4'15"	4'14"	0.01	174	174	0	14.5Km/h	14.5Km/h	0
15	1200	1200	0	4'15"	4'15"	0	175	175	0	14.5Km/h	14.5Km/h	0
16	1200	1200	0	4'15"	4'15"	0	173	173	0	14 Km/h	14 Km/h	0
17	1200	1200	0	4'15"	4'15"	0	175	175	0	14 Km/h	14 Km/h	0
18	1200	1200	0	4'15"	4'15"	0	175	175	0	14 .5Km/h	14 5Km/h	0

**Table 6: Comparison data for group 1 /800m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
1	800	800	0	2'40"	2'40"	0	175	175	0	14 Km/h	14 Km/h	0
2	800	800	0	2'39"	2'39"	0	174	174	0	14.5Km/h	14.5Km/h	0
3	800	800	0	2'39"	2'39"	0	175	175	0	14.5Km/h	14.5Km/h	0
4	800	800	0	2'39"	2'39"	0	173	173	0	14 Km/h	14 Km/h	0
5	800	800	0	2'40"	2'40"	0	175	175	0	14 Km/h	14 Km/h	0
6	800	800	0	2'40"	2'40"	0	175	175	0	14.5Km/h	14.5Km/h	0

**Table 7: Comparison data for group 2 /800m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
7	800	800	0	2'40"	2'40"	0	175	175	0	14 Km/h	14 Km/h	0
8	800	800	0	2'39"	2'39"	0	174	174	0	14.5Km/h	14.5Km/h	0
9	800	800	0	2'38"	2'38"	0	175	175	0	14 .5Km/h	14.5Km/h	0
10	800	800	0	2'38"	2'38"	0	173	173	0	14 Km/h	14 Km/h	0
11	800	800	0	2'40"	2'40"	0	175	175	0	14 Km/h	14 Km/h	0
12	800	800	0	2'40"	2'40"	0	175	175	0	14.5Km/h	14.5Km/h	0

**Table 8: Comparison data group for 3 /800m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
13	800	800	0	2'39"	2'39"	0	175	175	0	14 Km/h	14 Km/h	0
14	800	800	0	2'38"	2'38"	0	174	174	0	14.5Km/h	14.5Km/h	0
15	800	800	0	2'38"	2'38"	0	176	176	0	14.5Km/h	14.5Km/h	0
16	800	800	0	2'39"	2'39"	0	175	175	0	14 Km/h	14 Km/h	0
17	800	800	0	2'39"	2'39"	0	174	174	0	14 Km/h	14 Km/h	0
18	800	800	0	2'40"	2'40"	0	175	175	0	14.5Km/h	14.5Km/h	0

**Table 9: Comparison data group for 1 /400m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
1	400	400	0	80"	80"	0	180	180	0	15 Km/h	15 Km/h	0
2	400	400	0	79"	79"	0.01	183	183	0	15 .5Km/h	15.5Km/h	0
3	400	400	0	79"	79"	0	185	185	0	15 .5Km/h	15.5Km/h	0
4	400	400	0	79"	79"	0	182	182	0	15 Km/h	15 Km/h	0
5	400	400	0	80"	80"	0	183	183	0	15 Km/h	15 Km/h	0
6	400	400	0	80"	80"	0	185	185	0	15 .5Km/h	15.5Km/h	0

**Table 10: Comparison date group for 2 /400m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
7	400	400	0	78"	80"	0	185	185	0	15 Km/h	15 Km/h	0
8	400	400	0	79"	79"	0.01	184	184	0	15.5Km/h	15.5Km/h	0
9	400	400	0	78"	78"	0	185	185	0	15.5Km/h	15.5Km/h	0
10	400	400	0	78"	78"	0	183	183	0	15 Km/h	15 Km/h	0
11	400	400	0	80"	80"	0	185	185	0	15 Km/h	15 Km/h	0
12	400	400	0	80"	80"	0	185	185	0	15.5Km/h	15.5Km/h	0

**Table 11: Comparison data group for 3 /400m**

Player	Dist. 1	Dist. 2	Diff	Time 1	Time 2	Diff	HRmax 1	HRmax 2	Diff	Max speed 1	Max speed 2	Diff
13	400	400	0	79"	80'	0	185	185	0	15.5 Km/h	15 .5Km/h	0
14	400	400	0	80"	79'	0.01	184	184	0	15 Km/h	15 Km/h	0
15	400	400	0	80"	79'	0	186	186	0	15 .5Km/h	15 .5Km/h	0
16	400	400	0	79"	79'	0	185	185	0	15 .5Km/h	15 .5Km/h	0
17	400	400	0	79"	80'	0	184	184	0	15 Km/h	15 Km/h	0
18	400	400	0	80"	80'	0	185	185	0	15 .5Km/h	15 .5Km/h	0

## DISCUSSIONS

Increasing capacity in football players is another important aspect in order to increase their performance, so the study confirms the fact that it should be taken into account that the running drills on which the study was conducted should be repeated several times during the year and not only at the beginning of the season or during the mini phase that takes place in January of each year but also during the season when there is a pause from National matches. The selected tests should be repeated in time and without changes in any of the parameters (terrain, climate, method, etc.). It is necessary, however, to repeat them several times during the year and not only at the beginning of the season.

## CONCLUSION

This study aimed to conduct an analysis of how the current situation is presented among male football players who are active players in team X, where the team's participation in this study is 72% of the entire group of players.



The findings suggest the fact that the selected tests should be performed since in this way the players can be divided into groups depending on the similarity of running speed within the team. It was also concluded that athletes with a higher VO<sub>2</sub>max (63) (more phases completed) have more impacts than athletes with a lower VO<sub>2</sub>max (53). HRmax values range from 173-186 beats per minute. Max speed values range from 14 Km/h-15.5 Km/h

The need for this study comes first from the lack of previous similar studies in Albania on this topic, which makes the main results and findings more valuable, which will then serve as a source of theoretical information for Sports University students as well as interested actors in this area beyond the institution.

These results are in agreement with previous studies showing a major aerobic participation during aerobic fitness <sup>6,7</sup>.

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## SUSTAINABLE AGRARIAN REFORM: CONFLICT RESOLUTION BY REDISTRIBUTION FORMER LAND USE RIGHT IN CIANJUR, WEST JAVA

Rudi Rubijaya<sup>1</sup>, Iwan Setiawan<sup>1</sup>, Mahfud Arifin<sup>1</sup>, Achmad Choibar Tridakusuma<sup>1</sup>, Ristina Siti Sundari<sup>2</sup>

<sup>1</sup>Department of Agricultural Science, Agricultural Faculty. Universitas Padjadjaran. Jl. Bandung-Sumedang km 21. Jatinangor. Sumedang. West Java.

<sup>1</sup> <https://orcid.org/0000-0002-6004-350X>, [i.setiawan@unpad.ac.id](mailto:i.setiawan@unpad.ac.id). Department of Agricultural Science, Agricultural Faculty. Universitas Padjadjaran. Jl. Bandung-Sumedang km 21. Jatinangor. Sumedang. West Java

<sup>1</sup>Department of Agricultural Science, Agricultural Faculty. Universitas Padjadjaran. Jl. Bandung-Sumedang km 21. Jatinangor. Sumedang. West Java

<sup>1</sup>Department of Soil Science, Agricultural Faculty. Universitas Padjadjaran. Jl. Bandung-Sumedang km 21. Jatinangor. Sumedang. West Java

<sup>2</sup> <https://orcid.org/0000-0002-5310-8520>, [ristina.sitisundari@yahoo.com](mailto:ristina.sitisundari@yahoo.com). Agribusiness Study Program, Agricultural Faculty, Universitas Perjuangan Tasikmalaya. Jl. PETA No. 177 Tasikmalaya, West Java. Indonesia.

Corresponding Author: [rubijaya@gmail.com](mailto:rubijaya@gmail.com)

### Abstract

This research studied the impact of the redistribution of former land use rights of PT Maloya on agrarian conflict resolution in Cianjur, West Java, within the framework of the Sustainable Agrarian Reform Program. From 1985 to 2023, significant changes occurred, including the expiration of PT Maloya's HGU in 2010 and subsequent community demands that halted its extension. By 2020, PT Maloya handed over the land to the Indonesian Army and the Ministry of ATR/BPN, leading to its allocation for various uses such as community cultivation, government projects, and military purposes. The agreed allocations included 35.48 hectares for the SPP community, 38.96 hectares for the TNI, 5.06 hectares for the Regional Government, 4.58 hectares for a prison, 18.29 hectares for the Cultivator Community, 1.6 hectares for TPU, and 9.65 hectares for the village. Despite these efforts, challenges such as commercialization, asset transfers, and conflicts persist. This research highlights the complexities and challenges in land redistribution and agrarian conflict resolution, providing insights into effective land management models and policy recommendations for sustainable agrarian reform. Policymakers and practitioners working on agrarian reform in comparable sociopolitical circumstances can benefit from this review's insights.

Keywords: Agrarian conflict; agrarian reform;

## ANALYSIS AND MODELING TO STUDY THE DIFFERENT ENERGIES OF INITIAL CRACK USING THE FINITE ELEMENT METHOD OF A STRUCTURE

Mohammed Bentahar<sup>1</sup>, Nouredine Mahmoudi<sup>1</sup> and Moulai Arbi Youcef<sup>2</sup>  
bentahae@yahoo.fr

<sup>1</sup>Department of civil and hydraulic Engineering, University Tahar Moulay University, Saida, (Algeria) Technology Laboratory of Communication

<sup>2</sup>Department of mechanical Engineering, University, Mascara, Algeria

### Abstract

Fracture mechanics is a very broad field, as it deals with the study of crack propagation in materials. Moreover, in fracture mechanics, most components or structures generally contain defects of varying nature and magnitude. It uses methods of analytical solid mechanics and numerical simulation codes, to calculate and model the different crack characteristics of the different problems studied. This article treats the evaluation of the parameters of crack such as the various energy's, of deformation, internal, external and the total energy, of a model of cracked structure continents a hole of diameter ( $\varnothing h=0.1\text{mm}$  and  $\varnothing h=0.4\text{mm}$ ) by the finite element method and by using the Abaqus computer code.

The 8-node biquadrate plane stress quadrilateral elements (CPS4R) with the reduced integration were used. In addition, the validation of the results obtained in this work was compared between two hole modeling models, one of 0.1mm in diameter and the other of 0.4mm in diameter with the initial crack length  $a=1\text{mm}$ .

**Keywords:** Hole, Energy, Crack, FEM, Numerical modeling, 2D

**THEORETICAL INVESTIGATION OF HETEROCYCLIC CARBOXAMIDES**Ayesha Amin<sup>1</sup>, Sadia Afsheen<sup>1</sup>, Ayesha Malik<sup>1,\*</sup>[Aminng7865@gamil.com](mailto:Aminng7865@gamil.com) [sadi128776@gmail.com](mailto:sadi128776@gmail.com) [ayesha.m726@gmail.com](mailto:ayesha.m726@gmail.com)

Government College University Faisalabad, Department of Chemistry, Faisalabad, Pakistan

**Abstract**

Carboxamides are crucial analogs due to their diverse biological applications in many biological systems. Biological activities were found to be connected to the presence of heterocyclic rings in their molecular framework. Present research scenario, in silico studies were applied to analyze the biological potential as well as structural, electronic, and spectroscopic parameters of possible drug candidates. Five molecules were determined more potent among these series by molecular docking. These were included **4n**, **9c**, **9f**, **9g** and **4j**. compound **4n** exhibited four hydrogen bonds with binding energies -6.551 kcal/mol and -6.008 kcal/mol for PDB ID: 5N5I and PDB ID: 3TOP. **4j** and **9g** exhibited four hydrogen bonds with docking scores of -6.4612 kcal/mol, and 6.7229 kcal/mol against PDB ID: 3LN. DFT of heterocyclic carboxamides by using the PBE0-D3BJ/def2-TZVP/SMDDMSO level of theory. Benzamide derivatives and furan carboxamides were studied for HOMO, LUMO, and FMO. Moreover, both series were also studied for MESP, and geometry optimization was done by the same level of theory. The MESP analysis of **6a-6h** disclosed that electron density was spread all over the molecule, predicting that all molecules had nucleophilic and electrophilic regions. The compound's MESP studies revealed that charge density was more concentrated at thiophene, benzene, and aryl moiety.

**Keywords:** Carboxamides, DFT, Docking

**SYNTHESIS, CRYSTAL STRUCTURE, MORPHOLOGY, VIBRATIONAL STUDY AND OPTICAL PROPERTIES OF TWO ORTHOPHOSPHATES  $A(Sb_{0.50}Al_{0.50})(PO_4)_2$  (A= BA, PB).****Safae KADIMI SKALLI<sup>1</sup>****Adil CHAKIR<sup>1</sup>, Mohammed OUBAHOU<sup>3</sup>, Rachid FAKHREDDINE<sup>2</sup>, Boubker MEHDAOUI<sup>1</sup>, My Rachid TIGHA<sup>1</sup>, A. AATIQ<sup>1</sup> and Abdslam EL BOUARI<sup>1</sup>****E-Posta: Kadimisafae@gmail.com****<sup>1</sup>Laboratory of Physical Chemistry Materials & Catalysis Department of Chemistry, Faculty of Sciences Ben Sick, University Hassan II of Casablanca, Morocco.****<sup>2</sup>Laboratory of Materials Engineering for Environment and Recovery****(GeMEV), Faculty of Sciences Ain Chock, Hassan II University, Casablanca, Morocco.****<sup>3</sup>Laboratory of Physical Chemistry of Materials, Faculty of Sciences Ben M'Sick B.P.7955, Hassan II University of Casablanca, Casablanca, Morocco.****Özet**

This study reports the synthesis and characterization of two metal orthophosphate salts:  $A(Sb_{0.50}Al_{0.50})(PO_4)_2$ , where  $A^{2+}$  refers to Ba and Pb, these compounds abbreviated [Ba] and [Pb], were meticulously prepared via solid-state reactions under ambient air conditions, ensuring controlled synthesis environments. The crystal structures of these compounds were determined using Reitveld refinement based on X-ray powder diffraction data, providing detailed insights into their atomic arrangements and spatial configurations. [Ba] features the Yavapaiite-type structure, with space group  $C2/m$  and  $Z=2$ ,  $a = 8.155(1) \text{ \AA}$ ;  $b = 5.198(3) \text{ \AA}$   $c = 7.826(7) \text{ \AA}$ ;  $\beta = 93.53(1)^\circ$  and  $V = 331(1) \text{ \AA}^3$ , its structure type consists of layers, running along the (a,b) plane, and built up of corner-connected  $Sb(Al)O_6$  octahedra and  $PO_4^{3-}$  tetrahedra and the barium cations in ten-fold coordination. [Pb] adopts low-Yavapaiite structure crystalize in the monoclinic lattice with  $C2/c$  space group and  $Z=4$ ;  $a = 16.605(9) \text{ \AA}$ ;  $b = 5.128(6) \text{ \AA}$   $c = 8.073(3) \text{ \AA}$ ;  $\beta = 115.17(1)^\circ$ ;  $V = 631(1) \text{ \AA}^3$ . A comprehensive analysis using Raman and infrared spectroscopic techniques further investigated the structural and bonding properties of the crystalline solids. In addition, the morphology was investigated, and the chemical composition was confirmed by scanning electron microscopy (SEM) and energy dispersive X-ray spectroscopy (EDS). This study presents a comprehensive investigation into the dielectric, optical, and corrosion inhibition properties of novel materials with mixed  $Sb^{5+}$  and  $Al^{3+}$  ions in the octahedral sites of the Yavapaiite structure. Dielectric analysis highlights their excellent insulating properties, making them suitable for electronic and energy storage applications. Corrosion studies further demonstrate their effectiveness in mitigating corrosive processes, establishing their potential for protective industrial uses. Optical characterization via UV-vis spectroscopy confirms their isolating nature with band gap energies of 3.80 eV for [Ba] and [Pb]. By elucidating the vibrational modes, bonding applicability across various industrial sectors.

**Anahtar Kelimeler:** Yavapaiite structure, iron phosphate, Raman and IR spectroscopy, Rietveld analysis.

## DESIGN AND SYNTHESIS OF 5-BROMO-N-ALKYLTHIOPHENE-2-SULFONAMIDES TARGETING NDM-B-LACTAMASE-PRODUCING KLEBSIELLA PNEUMONIAE ST147

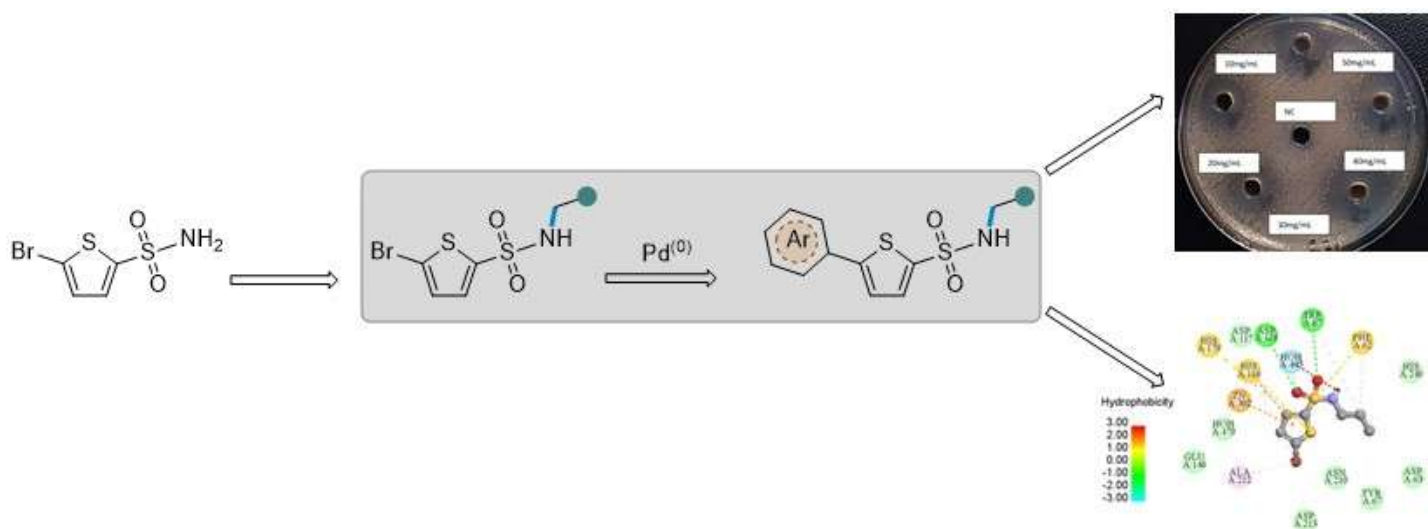
Lubiqa Bashir<sup>1</sup>, Muhammad Bilal<sup>1</sup>, Nasir Rasool<sup>1,\*</sup>

<sup>1</sup> Department of Chemistry, Government College University Faisalabad, 38000, Pakistan

### Abstract

New Delhi Metallo- $\beta$ -lactamase-producing *Klebsiella pneumoniae* (NDM-1-KP) ST147 poses a critical threat due to its evolution toward hypervirulence and carbapenem resistance. This study focused on synthesizing 5-bromo-N-alkylthiophene-2-sulfonamides via the reaction of 5-bromothiophene-2-sulfonamide with alkyl bromides using LiH. Additionally, compounds were derived from 5-bromo-N-propylthiophene-2-sulfonamide using the Suzuki-Miyaura cross-coupling reaction, achieving yields of 56–72%. These compounds were screened against clinically isolated NDM-KP ST147, with compound 5-bromo-N-propylthiophene-2-sulfonamide exhibiting exceptional potency (MIC: 0.39  $\mu\text{g/mL}$ , MBC: 0.78  $\mu\text{g/mL}$ ). In silico studies of 5-bromo-N-propylthiophene-2-sulfonamide against the protein (PDB ID: 5N5I) highlighted its favorable drug-like properties, demonstrating strong H-bond and hydrophobic interactions. The low molecular weight and high antibacterial efficacy of 5-bromo-N-propylthiophene-2-sulfonamide underscore its potential as a promising candidate to combat resistant bacterial strains. This research provides a valuable framework for addressing the growing threat of multidrug-resistant pathogens in clinical settings.

**Key Words:** *Klebsiella pneumoniae* (NDM-1-KP) ST147; N-alkylthiophene-2-sulfonamides; In-silico studies



## DETERMINATION OF THE TRANSITIVITY AND PRIMITIVITY OF DIHEDRAL GROUPS OF PRIME DEGREES THAT ARE NOT P-GROUPS USING NUMERICAL APPROACH

Ben O. J.<sup>1</sup> and Adagba T. T.<sup>2</sup>

Orcid: 0000-0003-4480-6770

<sup>1,2</sup>Department of Mathematics, Federal University, Wukari, Taraba State, Nigeria.

Corresponding Author: Ben Obakpo Johnson, Federal University, Wukari, Taraba State, Nigeria.

Email: benjohnsonnig@yahoo.com

### ABSTRACT

Let  $G$  be a non-trivial permutation group on  $\Omega$  such that  $G$  acts on  $\Omega$ , a typical point  $\alpha$  is moved by elements of  $G$  to various other points. The set of these images is called the orbit of  $\alpha$  under  $G$ , and we denote it by  $\alpha^G := \{ \alpha^g \mid g \in G \}$ . A group  $G$  acting on a set  $\Omega$  is said to be transitive on  $\Omega$  if it has one orbit and so  $\alpha^G = \Omega$  for all  $\alpha \in \Omega$ . Equivalently,  $G$  is transitive if for every pair of point  $\alpha, \beta \in \Omega$  there exists  $g \in G$  such that  $\alpha^g = \beta$ . A permutation group  $G$  acting on a non empty set  $\Omega$  is called primitive if  $G$  acts transitively on  $\Omega$  and  $G$  preserves no non trivial partition of  $\Omega$ . Where non-trivial partition means a partition that is not a partition into singleton sets or partition into one set  $\Omega$ . In other words, a group  $G$  is said to be primitive on a set  $\Omega$  if the only sets of imprimitivity are the trivial ones otherwise  $G$  is imprimitive on  $\Omega$ . In this work we used computational tools, including GAP (Groups, Algorithms, and Programming) and numerical approach to examine dihedral groups, analyzing their structures and action properties and discuss their transitive and primitive nature. The findings contribute to a deeper understanding of finite permutation groups, offering new insights into their classification and properties. This study not only enriches the theoretical framework of abstract algebra but also provides practical applications in areas such as cryptography, chemistry, and computational group theory.

Keywords: transitive groups, primitive groups, prime degree, p-groups, numerical approach, group theory, GAP

### 1.0 INTRODUCTION

#### 1.1 Background of the Study

Group Theory plays great roles in every branch of Mathematics where symmetry is studied. Every symmetrical object has to do with a group. It will be difficult to talk about symmetry among objects without making reference to the theory of groups. The theory of groups is one of the oldest branches of Abstract Algebra. The ultimate goal of group theory is to classify all groups up to isomorphism; that is, given a particular group, we should be able to match it up with a known group via an isomorphism. The first effective use of groups was in the early nineteenth century by Joseph Louis Lagrange, Paolo Ruffini and Everiste Galois. They used groups to describe the effect of permutations of roots of a polynomial equation (Galois and Singh, 1897). Their use of groups was not based on an axiomatic



approach. The concept was investigated by Augustine-Louis Cauchy, and was refined by Arthur Cayley. Cayley (1854) gave the first postulates for a group. However, his definition was lost sight of. Leopold Kronecker in 1870 set down the axioms for an Abelian group. Johanna Weber gave the definition for finite and infinite groups in 1882 and 1883 respectively (Kleiner, 1986). Until about 1850, according to Cameron (2013), the term ‘group’ referred to a set  $G$  of transformations of a set  $\Omega$ , such that  $G$  closed under composition, contains the identity transformation and the inverse of each of its elements. This is what would now be called a ‘permutation group’ he asserted. The implication of the last requirement, every element of  $G$  has an inverse is that, the function is one-to-one and onto, that is, a permutation. In the modern, axiomatic approach, a group is a non-empty set  $G$  equipped with a binary operation denoted as  $*$  which satisfies the associativity, identity and inverse algebraic properties. Of course, the two approaches are essentially the same; we take the modern viewpoint because we do not want to restrict group elements to being transformations of some things. Any permutation group is an algebraic structure with the operation of function composition (since this operation is necessarily associative) see Gallian (2010) and Roman (2012).

Let  $\Omega$  be a nonempty set, a permutation of  $\Omega$  is a bijection  $\alpha: \Omega \rightarrow \Omega$ . We denote the set of all permutations of  $\Omega$  by  $S_\Omega$ . When  $\Omega$  is finite, that is,  $\Omega = \{1, 2, \dots, n\}$ , we write  $S_n$  (the symmetric group of degree  $n$ ) instead of  $S_\Omega$  where  $|S_n| = n!$  is the number of elements in  $S_n$  referred to as the order of the group  $S_n$ . Joseph-Louis Lagrange during his time observed permutation as arrangements, that is, as a list  $i_1, i_2, \dots, i_n$  with no repetition of any of the elements of  $\Omega$ . Given an arrangement,  $i_1, i_2, \dots, i_n$ , define a function  $\alpha: \Omega \rightarrow \Omega$  by  $\alpha(j) = i$  for all  $j \in \Omega$ . Thus, every rearrangement gives a bijection (Burness and Tong-Viet, 2016).

Dihedral groups, the groups of symmetries of a regular polygon, which consist of rotations and reflections are good examples of finite permutation groups and have series of applications especially in natural sciences and engineering (Cameron, 2013). There are two notable notations for dihedral groups associated with a polygon with  $n$  regular sides or degrees namely  $D_n$  and  $D_{2n}$ . In this work, we shall stick to  $D_n$  which symbolizes the symmetry of a regular polygon with  $n$  sides (that is, the dihedral group of degree  $n$ ).

When any group  $G$ , be it a dihedral or symmetric group acts on a set  $\Omega$ , a typical point  $\alpha$  is moved by elements of  $G$  to various other points. The set of these images is called the orbit of  $\alpha$  under  $G$ , and we denote it by  $\alpha^G := \{ \alpha^g \mid g \in G \}$ . A group  $G$  acting on a set  $\Omega$  is said to be transitive on  $\Omega$  if it has one orbit and so  $\alpha^G = \Omega$  for all  $\alpha \in \Omega$ . Equivalently,  $G$  is transitive if for every pair of point  $\alpha, \beta \in \Omega$  there exists  $g \in G$  such that  $\alpha^g = \beta$ . A group which is not transitive is called intransitive, see Fawcett (2013). A permutation group  $G$  acting on a non empty set  $\Omega$  is called primitive if  $G$  acts transitively on  $\Omega$  and  $G$  preserves no non trivial partition of  $\Omega$ . Where

non-trivial partition means a partition that is not a partition into singleton sets or partition into one set  $\Omega$ . In other words, a group  $G$  is said to be primitive on a set  $\Omega$  if the only sets of imprimitivity are the trivial ones otherwise  $G$  is imprimitive on  $\Omega$ .

Transitivity and primitivity are two pivotal properties that provide deeper insights into group structures. Primitive groups represents the building blocks of all finite groups, akin to prime numbers in number theory. Transitivity, on the other hand, reflects a group's ability to act uniformly on a set, highlighting its symmetrical properties.

Graphical and numerical approaches coupled with the use of computational tools like GAP, have emerged as valuable methods for analyzing these complex algebraic structures see Hulpke, *et al* (2016). This study aims to explore dihedral group of prime degrees that are not p-groups, focusing on their transitivity and primitivity using numerical techniques.

## 2.0 MATERIALS AND METHOD

In this work, knowledge of the basic facts from both the theory of abstract finite groups and the theory of permutation will be assumed throughout. Relevant theorems and results are given and quoted with example where necessary, in order to enhance proper understanding of the subject matter. We also use the Groups Algorithm and Programming (GAP) to enhance and validate our work.

### 2.1 Theorem (Thomas Judson, 2007)

The symmetric group on  $n$  letters,  $S_n$ , is a group with  $n!$  elements, where the binary operation is the composition of maps.

#### Proof:

The identity of  $S_n$  is just the identity map that sends 1 to 1, 2 to 2, ...,  $n$  to  $n$ . If  $f: S_n \rightarrow S_n$  is a permutation, then  $f^{-1}$  exists, since  $f$  is one-to-one and onto; hence, every permutation has an inverse. Composition of maps is associative, which makes the group operation associative.

### 2.2 Lemma

Let  $G$  be a dihedral group. Then  $G = D_n$  has  $2n$  distinct elements.

#### Proof:

Conventionally, we write  $D_n = \langle r, f \mid r^n = f^2 = 1, fr = r^{n-1}f = r^{-1}f \rangle$  and we say that  $D_n$  is the group generated by the elements  $r$  and  $f$  subject to the conditions

$$r^n = f^2 = 1; fr = r^{n-1}f = r^{-1}f, \quad \dots (1)$$

and the  $2n$  distinct elements of  $D_n$  are

$$1, r, r^2, \dots, r^{n-1}, f, rf, r^2f, \dots, r^{n-1}f \quad \dots (2)$$

Here  $r$  is a rotation about the centre of the polygon through angle  $2\pi/n$  and  $f$  is a reflection about an axis of symmetry of the polygon.

### 2.3 Group Action (Dixon and Mortimer, 1996)

If a group  $G$  is acting on a subgroup  $H$  of  $G$ , then  $H$  is equipped with the restriction of the operation of  $G$ .

Let  $G$  be a group and  $\Omega$  be a non-empty set. We say that  $G$  acts on  $\Omega$  (or that  $G$  permutes  $\Omega$ ) if to each  $a \in \Omega$  and  $g_1, g_2$  in  $G$  we have that  $(ag_1)g_2 = a(g_1g_2)$  and  $ae = a$ , where  $e$  is the identity element of  $G$ .

### 2.4 Transitivity

Let  $G$  be a permutation group on  $\Omega$ , where  $\Omega$  is a finite set.

1. We say that  $G$  is  $\frac{1}{2}$ -transitive if all the orbits have the same size.
2. Suppose that  $G$  has just one orbit  $\Omega$ . then for all  $r \in \Omega, r^G = \Omega$  and as such for any  $\alpha, \beta \in \Omega$  there exists  $g \in G$  such that  $\alpha^g = \beta$ , and  $G$  is said to be transitive (or that  $G$  acts transitively) on  $\Omega$
3. The group  $G$  is said to be  $k$ -fold transitive (or, simply  $k$ -transitive) on  $\Omega$  if, for any sequences  $\alpha_1, \alpha_2, \dots, \alpha_k$  such that  $\alpha_i \neq \alpha_j$  when  $i \neq j; \beta_1, \beta_2, \dots, \beta_k$  such that  $\beta_1 \neq \beta_j$  when  $i \neq j$  of  $k$  elements of  $\Omega$ , there exists  $g \in G$  such that

$$\alpha_i^g = \beta_i \text{ for } 1 \leq i \leq k. \quad \dots (3)$$

Thus for  $k = 2$  we have that for  $\alpha_1, \alpha_2, \beta_1, \beta_2$  in  $\Omega$  with  $\alpha_1 \neq \alpha_2, \beta_1 \neq \beta_2$  there exists  $g \in G$  such that;

$$\alpha_1^g = \beta_1, \alpha_2^g = \beta_2. \quad \dots (4)$$

and we say that  $G$  is doubly transitive.

### 2.5 Corollary (Rotman, 1979)

A finite group  $G$  is a  $p$ -group if and only if  $|G|$  is a power of  $p$

**Proof:**

If  $|G| = p^m$ , then Lagrange's theorem show that  $G$  is a  $p$ -group. Conversely, assume that there is a prime  $q \neq p$  which divides  $|G|$ . By Cauchy's theorem,  $G$  contains an element of order  $q$ , and this contradicts  $G$  of being a  $p$ -group.

### 2.6 Lemma

Let  $G$  be a dihedral group of any order, then  $G$  is transitive.

**Proof:**

For given  $\alpha_i, \alpha_j$  as any two vertices of the regular polygon with  $i < j$ , we readily see that  $(\alpha_1, \alpha_2, \dots, \alpha_i, \dots, \alpha_j, \dots, \alpha_n)^{j-i}$  is the rotation about the centre of the polygon through angle  $2\pi^c/n$  (where  $n$  is the number of edges of the polygon) which take  $\alpha_i$  to  $\alpha_j$ . As such  $G$  is transitive.

**2.7 Primitivity (Araújo et al., 2016)**

A permutation group  $G$  acting on a non empty set  $\Omega$  is said to be primitive on a set  $\Omega$  if and only if it preserves the trivial block system otherwise  $G$  is imprimitive on  $\Omega$ . For example, the group

$S_3 = \{(1), (12), (13), (23), (123), (132)\}$  is primitive as  $\{1,2\}^{(1\ 2\ 3)} = \{2,3\}$  implying that  $\Delta^g \neq \Delta$  and  $\Delta^g \cap \Delta \neq \emptyset$  for  $\Delta = \{1,2\}$ .

On the other hand a subset  $\Delta$  of  $\Omega$  is said to be a set of imprimitivity for the action of  $G$  on  $\Omega$ , if for each  $g \in G$ , either  $\Delta^g = \Delta$  or  $\Delta^g$  and  $\Delta$  are disjoint. In particular,  $\Omega$  itself, the 1-element subsets of  $\Omega$  and the empty set are obviously sets of imprimitivity which are called trivial set of imprimitivity.

The group of symmetry  $D_8 = \{(1), (1234), (13)(24), (1432), (13), (24), (12)(34), (14)(23)\}$  of the square with vertices 1,2,3,4 is imprimitive. For take  $G_1 = \{(1), (24)\}$ .

Let  $H = \{(1), (13), (24), (13)(24)\}$  which is a normal subgroup of  $G$ . Then  $H$  is a group greater than  $G_1$ , but not equal to  $G$ .

**2.8 Theorem (Passman, 1968)**

Let  $G$  be a non-trivial transitive permutation group on  $\Omega$ . Then  $G$  is primitive iff  $G_\alpha, (\alpha \in \Omega)$  is a maximal subgroup of  $G$  or equivalently,  $G$  is imprimitivity if and only if there is a subgroup  $H$  of  $G$  properly lying between  $G_\alpha, (\alpha \in \Omega)$  and  $G$ .

**Proof:**

Suppose  $G$  is imprimitive and  $\psi$  a non-trivial subset of imprimitivity of  $G$ . Let  $H = \{g \in G \mid \psi^g = \psi\}$ . Clearly  $H$  is a subgroup of  $G$  and a proper subgroup of  $G$  because  $\psi \subset \Omega$  and  $G$  is transitive.

Now choose  $\alpha \in \psi$ . If  $g \in G$  then  $\alpha^g = \alpha$ , showing that  $\alpha \in \psi \cap \psi^g$  and so  $\psi = \psi^g$ .

Hence  $H \leq G$ . Which follow that  $G_\alpha \leq H \leq G$ .

Since  $|\psi| \neq 1$ , choose  $\beta \in \psi$  such that  $\beta \neq \alpha$ . By transitivity of  $G$ , there exist some  $h \in G$  with  $\alpha^h = \beta$  so that  $h \in G_\alpha$ . Now  $\beta \in \psi \cap \psi^h$ , so  $\psi = \psi^h$  and  $h \in H - G_\alpha$ . Thus,  $H \neq G_\alpha$ .

Hence  $G_\alpha$  is not a maximal subgroup.

Conversely, suppose that  $G_\alpha < H < G$  for some subgroup  $H$ .

Let  $\psi = \alpha^H$ . Since  $H > G_\alpha, |\psi| \neq 1$ .

Now if  $\psi = \Omega$ , then  $H$  is transitive on  $\Omega$  and hence  $|\Omega| = |G:G_\alpha| = |H:G_\alpha|$  showing that  $H = G$ , a contradiction.

Hence,  $\psi = \Omega$ .

Now we shall show that  $\psi$  is a subset of imprimitivity of  $G$ .

Let  $g \in G$  and  $\beta \in \psi \cap \psi^g$  then  $\beta = \alpha^h = \alpha^{h'g}$  for some  $h, h' \in H$ .

Hence  $\alpha^{h'gh^{-1}} = \alpha$ . So  $h'gh^{-1} \in G_\alpha < H$ .

Thus  $\psi = \psi^g$ . Hence  $\psi$  is a non-trivial subset of imprimitivity. So  $G$  is imprimitive.

### 3.0 RESULTS AND DISCUSSION

#### 3.1 Introduction

Here, we discuss in detail the transitivity and primitivity of dihedral groups of prime degrees that are not  $p$ -groups using numerical approach.

#### 3.2 Transitivity and Primitivity of Dihedral Groups of Prime Degrees.

The following are the main results on the constructed Wreath Product group of degree  $3p$ .

##### 3.2.1 The Dihedral Group of Degree $n$ ( $n = 3$ )

Consider a regular triangle  $T$ , with vertices labeled 1, 2, and 3. We show  $T$  below, also using dotted lines to indicate a vertical line of symmetry of  $T$  and a rotation of  $T$ .

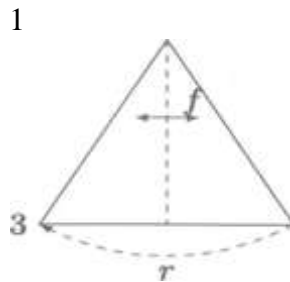


Figure 1. An Equilateral Triangle with vertexes labeled 1, 2, 3.

Note that if we reflect  $T$  over the vertical dotted line (indicated in the picture by  $f$ ),  $T$  maps onto itself, with 1 mapping to 1, and 2 and 3 mapping to each other. Similarly, if we rotate  $T$  clockwise by  $120^\circ$  (indicated in the picture by  $r$ ),  $T$  again maps onto itself, this time with 1 mapping to 2, 2 mapping to 3, and 3 mapping to 1. Both of these maps are called *symmetries* of  $T$ ;  $f$  is a *reflection* or *flip* and  $r$  is a *rotation*.

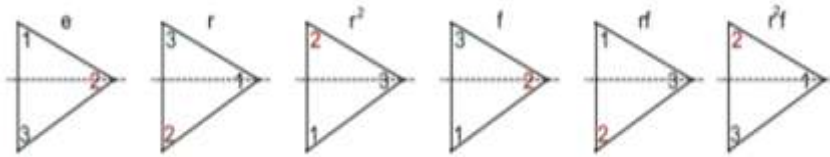
Of course, these are not the only symmetries of  $T$ . If we compose two symmetries of  $T$ , we obtain a symmetry of  $T$ : for instance, if we apply the map  $f \circ r$  to  $T$  (meaning first do  $r$ , then do  $f$ ) we obtain reflection over the line connecting 2 to the midpoint of line segment 1-3. Similarly, if we apply the map  $f \circ (ror)$  to  $T$  (first do  $r$  twice, then do  $f$ ) we obtain reflection over the line connecting 3 to the midpoint of line segment 1-2. In fact, every symmetry of  $T$  can be obtained by composing applications of  $f$  and applications of  $r$ .

For convenience of notation, we omit the composition symbols, writing, for instance,  $fr$  for  $f \circ r$ ,  $r \circ r$  as  $r^2$ , etc. It turns out there are exactly six symmetries of  $T$ , namely:

1. the map  $e$  from  $T$  to  $T$  sending every element to itself;
2.  $f$  (i.e, reflection over the line connecting 1 and the midpoint of 2-3);
3.  $r$  (that is, clockwise rotation by  $120^\circ$ );
4.  $r^2$  (that is, clockwise rotation by  $240^\circ$ );
5.  $fr$  (i.e., reflection over the line connecting 2 and the midpoint of 1-3); and
6.  $fr^2$  (ie reflection over the line connecting 3 and the midpoint of 1-2).

Figure 2. A labeled triangle after individual elements of  $D_3$  have been applied

Declaring that  $f^\circ = r^\circ = e$ , the set



$D_3 = \{e, f, r, r^2, fr, fr^2\}$  is the collection of all symmetries of  $T$ .

The Cayley table for the group  $D_3$  is as follows.

$\times$	$e$	$r$	$r^2$	$f$	$rf$	$r^2f$
$e$	$e$	$r$	$r^2$	$f$	$rf$	$r^2f$
$r$	$r$	$r^2$	$e$	$rf$	$r^2f$	$f$
$r^2$	$r^2$	$e$	$r$	$r^2f$	$f$	$rf$
$f$	$f$	$r^2f$	$rf$	$e$	$r^2$	$r$
$rf$	$rf$	$f$	$r^2f$	$r$	$e$	$r^2$
$r^2f$	$r^2f$	$rf$	$f$	$r^2$	$r$	$e$

Table 1. Calay's table for  $D_3$

The elements of the group  $D_3$  in cycle form is as follows.

$$D_3 = \{(1), (2,3), (1,2), (1,2,3), (1,3,2), (1,3)\}$$

Routing calculations shows that the stabilizers of the points 1, 2 and 3 are respectively given by:

$$G_1 = \{(1), (23)\}$$

$$G_2 = \{(1), (13)\}$$

$$G_3 = \{(1), (12)\}$$

And the orbit of the points 1, 2 and 3 is given by  $1^G = 2^G = 3^G = \{1, 2, 3\}$

A group  $G = D_3$  acting on a set  $\Omega = \{1, 2, 3\}$  is said to be transitive on  $\Omega$  if it has one orbit, and so  $\alpha^G = \Omega$  for all  $\alpha \in \Omega$ . A group which is not transitive is called intransitive. Thus,  $D_3 = \{(1), (1,2), (1,3), (2,3), (123), (132)\}$  is transitive.

$D_3 = \{(1), (12), (13), (23), (123), (132)\}$  is primitive as  $\{1,2\}^{(1\ 2\ 3)} = \{2,3\}$  implying that  $\Delta^g \neq \Delta$  and  $\Delta^g \cap \Delta \neq \emptyset$  for  $\Delta = \{1,2\}$ .

On the other hand a subset  $\Delta$  of  $\Omega$  is said to be a set of imprimitivity for the action of  $G$  on  $\Omega$ , if for each  $g \in G$ , either  $\Delta^g = \Delta$  or  $\Delta^g$  and  $\Delta$  are disjoint. In particular,  $\Omega$  itself, the 1-element subsets of  $\Omega$  and the empty set are obviously sets of imprimitivity which are called trivial set of imprimitivity.

### 3.2.2 The Dihedral Group of Degree n (n = 5)

Let's consider a pentagon with its corners numbered 1, 2, 3, 4 and 5.

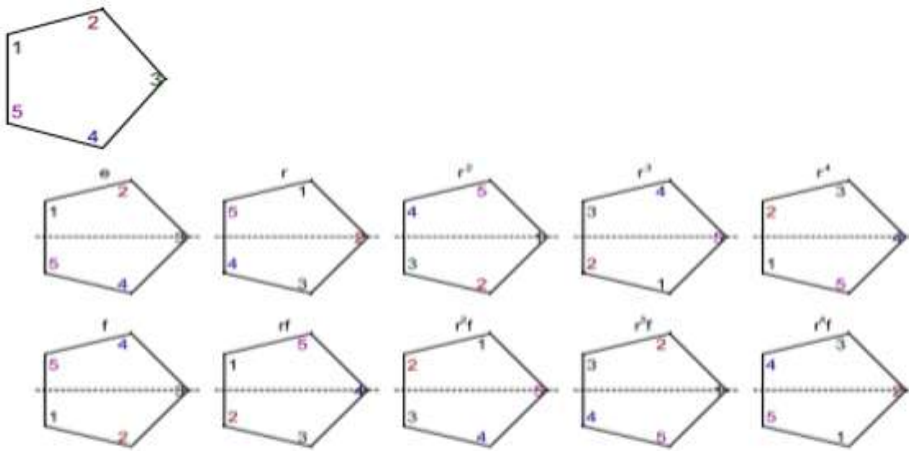


Figure 6. A labeled pentagon after individual elements of  $D_5$  have been applied

$\times$	$e$	$r$	$r^2$	$r^3$	$r^4$	$f$	$rf$	$r^2f$	$r^3f$	$r^4f$
$e$	$e$	$r$	$r^2$	$r^3$	$r^4$	$f$	$rf$	$r^2f$	$r^3f$	$r^4f$
$r$	$r$	$r^2$	$r^3$	$r^4$	$e$	$rf$	$r^2f$	$r^3f$	$r^4f$	$f$
$r^2$	$r^2$	$r^3$	$r^4$	$e$	$r$	$r^2f$	$r^3f$	$r^4f$	$f$	$rf$
$r^3$	$r^3$	$r^4$	$e$	$r$	$r^2$	$r^3f$	$r^4f$	$f$	$rf$	$r^2f$
$r^4$	$r^4$	$e$	$r$	$r^2$	$r^3$	$r^4f$	$f$	$rf$	$r^2f$	$r^3f$
$f$	$f$	$r^4f$	$r^3f$	$r^2f$	$rf$	$e$	$r^4$	$r^3$	$r^2$	$r$
$rf$	$rf$	$f$	$r^4f$	$r^3f$	$r^2f$	$r$	$e$	$r^4$	$r^3$	$r^2$
$r^2f$	$r^2f$	$rf$	$f$	$r^4f$	$r^3f$	$r^2$	$r$	$e$	$r^4$	$r^3$
$r^3f$	$r^3f$	$r^2f$	$rf$	$f$	$r^4f$	$r^3$	$r^2$	$r$	$e$	$r^2$
$r^4f$	$r^4f$	$r^3f$	$r^2f$	$rf$	$f$	$r^4$	$r^3$	$r^2$	$r$	$e$

Table 3. Cayley's table for  $D_5$

The elements of the group  $D_3$  in cycle form is as follows.



$$D_5 = \left\{ \begin{array}{l} (1), (2,5)(3,4), (1,2)(3,5), (1,2,3,4,5), (1,3)(4,5), (1,3,5,2,4), \\ (1,4)(2,3), (1,4,2,5,3), (1,5,4,3,2), (1,5)(2,4) \end{array} \right\}$$

Routing calculations shows that the stabilizers of the points 1, 2, 3, 4 and 5 are respectively given by:

$$G_1 = \{(1), (2,5)(3,4)\}$$

$$G_2 = \{(1), (1,3)(4,5)\}$$

$$G_3 = \{(1), (1,5)(2,4)\}$$

$$G_4 = \{(1), (1,2)(3,5)\}$$

$$G_5 = \{(1), (1,4)(2,3)\}$$

And the orbit of the points 1, 2 and 3 is given by  $1^G = 2^G = 3^G = 4^G = 5^G = \{1, 2, 3, 4, 5\}$

A group  $G = D_5$  acting on a set  $\Omega = \{1, 2, 3, 4, 5\}$  is said to be transitive on  $\Omega$  if it has one orbit, and so  $\alpha^G = \Omega$  for all  $\alpha \in \Omega$ . A group which is not transitive is called intransitive. Thus,

$$D_5 = \left\{ \begin{array}{l} (1), (2,5)(3,4), (1,2)(3,5), (1,2,3,4,5), (1,3)(4,5), (1,3,5,2,4), \\ (1,4)(2,3), (1,4,2,5,3), (1,5,4,3,2), (1,5)(2,4) \end{array} \right\} \text{ is transitive.}$$

Also the stabilizer of each element is maximal in  $D_3$  as there exists no normal subgroup of order greater than 2. Thus,  $D_5$  is primitive.

### 3.2.3 GAP Results

We shall now construct dihedral groups of prime degrees and investigate their transitivity and primitivity using the group algorithm and programming (GAP).



GAP 4.12.2 built on 2022-12-19 10:30:03+0000

<https://www.gap-system.org>

Architecture: x86\_64-pc-cygwin-default64-kv8

Configuration: gmp 6.2.1, GASMAN, readline

Loading the library and packages...

Packages: AClib 1.3.2, Alnuth 3.2.1, AtlasRep 2.1.6, AutPGrp 1.11, Browse 1.8.19, CaratInterface 2.3.4, CRISP 1.4.6, Cryst 4.1.25, CrystCat 1.1.10, CTblLib 1.3.4, curlInterface 2.3.1, FactInt 1.6.3, Forms 1.2.9, GAPDoc 1.6.6, genss 1.6.8, IO 4.8.0, IRREDSOL 1.4.4, LAGUNA 3.9.5, orb 4.9.0, Polenta 1.3.10, Polycyclic 2.16, PrimGrp 3.4.3, RadiRoot 2.9, recog 1.4.2, ResClasses 4.7.3, SmallGrp 1.5.1, Sophus 1.27, SpinSym 1.5.2, TomLib 1.2.9, TransGrp 3.6.3, utils 0.81 Try '??help' for help. See also '?copyright', '?cite' and '?authors'

gap>

gap> D3 := DihedralGroup(IsGroup 6);

Group([ (1,2,3), (2,3) ])

gap> Order (D3);

6

gap> Elements (D3);;

gap>

gap> IsAbelian (D3);

false

gap> IsTransitive (D3);

true

gap> IsPrimitive (D3);

true

```
gap>
gap> D5 := DihedralGroup(IsGroup, 10);
Group([ (1,2,3,4,5), (2,5)(3,4) ])
gap> Order (D5);
10
gap> Elements (D5);;
gap> IsAbelian (D5);
false
gap> IsTransitive (D5);
true
gap> IsPrimitive (D5);
true
gap> D7 := DihedralGroup(IsGroup, 14);
Group([ (1,2,3,4,5,6,7), (2,7)(3,6)(4,5) ])
gap> Order (D7);
14
gap> Elements (D7);;
gap> IsAbelian (D7);
false
gap> IsTransitive (D7);
true
gap> IsPrimitive (D7);
true
gap>
gap> D11 := DihedralGroup(IsGroup, 22);
Group([ (1,2,3,4,5,6,7,8,9,10,11), (2,11)(3,10)(4,9)(5,8)(6,7) ])
gap> Order (D11);
22
gap> Elements (D11);;
gap> IsAbelian (D11);
false
gap> IsTransitive (D11);
true
gap> IsPrimitive (D11);
true
gap>
gap> D13 := DihedralGroup(IsGroup, 26);
Group([ (1,2,3,4,5,6,7,8,9,10,11,12,13), (2,13)(3,12)(4,11)(5,10)(6,9)(7,8) ])
gap> Order (D13);
26
gap> Elements (D13);;
gap> IsAbelian (D13);
false
gap> IsTransitive (D13);
true
gap> IsPrimitive (D13);
```

```
true
gap>
gap> D17 := DihedralGroup(IsGroup, 34);
Group([(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17), (2,17)(3,16)(4,15) (5,14)(6,13)(7,12) (8,11) (9,10) ])
gap> Order (D17);
34
gap> Elements (D17);;
gap> IsAbelian (D17);
false
gap> IsTransitive (D17);
true
gap> IsPrimitive (D17);
true
gap>
gap> D19 := DihedralGroup(IsGroup, 38);
Group([ (1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19), (2,19)(3,18)(4,17)(5,16)(6,15)(7,14) (8,13)
(9,12)(10,11) ])
gap> Order (D19);
38
gap> Elements (D19);;
gap> IsAbelian (D19);
false
gap> IsTransitive (D19);
true
gap> IsPrimitive (D19);
true
gap>
gap> D23 := DihedralGroup(IsGroup, 46);
Group([(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23),(2,23)(3,22)(4,21)(5,20)
(6,19)(7,18)(8,17)(9,16)(10,15)(11,14)(12,13) ])
gap> Order (D23);
46
gap> Elements (D23);;
gap> IsAbelian (D23);
false
gap> IsTransitive (D23);
true
gap> IsPrimitive (D23);
true
gap>
gap> D27 := DihedralGroup(IsGroup, 54);
Group([(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27),(2,27)(3,26)(4,25)(5,24)(6,23)
(7,22)(8,21)(9,20)(10,19)(11,18)(12,17)(13,16)(14,15) ])
gap> Order (D27);
54
gap> Elements (D27);;
```

```
gap> IsAbelian (D27);
false
gap> IsTransitive (D27);
true
gap> IsPrimitive (D27);
false
gap>
gap> D29 := DihedralGroup(IsGroup, 58);
Group([(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29),(2,29)(3,28)(4,27)(5,26)
)(6,25)(7,24)(8,23)(9,22)(10,21)(11,20)(12,19)(13,18)(14,17)(15,16) ])
gap> Order (D29);
58
gap> Elements (D29);;
gap> IsAbelian (D29);
false
gap> IsTransitive (D29);
true
gap> IsPrimitive (D29);
true
gap>
gap> D31 := DihedralGroup(IsGroup, 62);
Group([(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31)(2,31)(3,30)(4,29)
)(5,28)(6,27)(7,26)(8,25)(9,24)(10,23)(11,22)(12,21)(13,20)(14,19)(15,18)(16,17) ])
gap> Order (D31);
62
gap> Elements (D31);;
gap> IsAbelian (D31);
false
gap> IsTransitive (D31);
true
gap> IsPrimitive (D31);
true
gap>
```

Based on the trend in **3.2.1**, **3.2.2** and **3.2.3** we proved a proposition which concerns particularly on transitivity and primitivity of all the dihedral groups of prime degree which are not  $p$ -group. This is the content of the next proposition and therefore it forms an important part of this work.

### 3.2.4 Proposition

Let  $G$  be a dihedral group of degree  $p$ , where  $p$  is an odd prime number. Then  $G$  is (i) transitive and (ii) imprimitive.

**Proof**

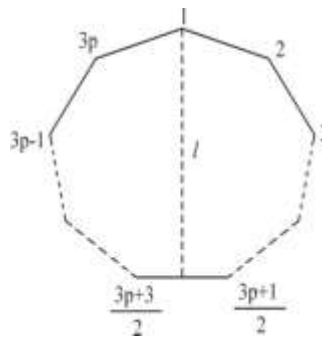
(i) That  $G$  is transitive follows easily from Lemma 2.6. Next, name the vertices of  $G$  as  $1, 2, 3, \dots, p$  and let  $l$  be the line of symmetry joining the vertex 1 and the middle of the vertices  $\frac{p+1}{2}$  and  $\frac{p+3}{2}$  so that

$$\alpha = (2, p)(3, p - 1)(4, p - 2) \dots \dots \left(\frac{p+1}{2}, \frac{p+3}{2}\right) \dots (5)$$

is the reflection in  $l$  (see figure 2). Then  $G_1 = \{(1), \alpha\}$  is the stabilizer of the point 1. We readily see that  $G_1$  is a non-identity proper subgroup of  $G$  which has

$$H = \left\{ (1), (2, p), (3, p - 1), (4, p - 2), \dots, \left(\frac{p+1}{2}, \frac{p+3}{2}\right), \alpha \right\} \dots (6)$$

as a subgroup properly lying between  $G_1$  and  $G$ , that is,  $G_1 < H < G$ . It follows by virtue of Theorem 2.8 that  $G$  is imprimitive.



**Figure 1: Diagram for Dihedral Groups of Degree  $p$ .**

**4.1 Conclusion**

The purpose of this research was to carry out further study on transitive and primitive dihedral groups of certain degrees. In particular, the ultimate goal was to determine the transitive and primitive nature of dihedral groups of prime degrees that are not  $p$ -groups using numerical approach. This entails generating dihedral groups of these degrees, studying, investigating and analyzing them so as to determine their transitivity and primitivity properties.

To do this, we set out specific objectives which were achieved as follows:

- i) All dihedral groups of prime degrees that are not  $p$ -groups were shown to be transitive and primitive.
- ii) The results in (i) above were validated using illustrations and a standard program namely Groups, Algorithms and Programming (GAP) version 4.11.1 of 2021.

**4.2 Recommendations**

We highly recommend that future research should further examine the groups been considered in this work to determine their nilpotency and regularity using numerical approach. This will further enhance already done works towards completion of the rewriting of the proofs of the Classification of the Finite Simple Groups (CFSG) that has been on course for a while now.

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## HYPERVITAMINOSIS A OR HYPOVITAMINOSIS A: A GLOBAL CONCERN

Gjylai Alija<sup>1</sup>, Drita Yzeiri- Havziu<sup>2</sup>, Arbnore Nazifi<sup>2</sup>, Hanife Rustemi-Ahmeti<sup>2</sup>

<sup>1,2</sup>Department of Pharmacy, Faculty of Medical Sciences, University of Tetova, Tetovo, R. of N. Macedonia

\*Corresponding author e-mail: [gjylai.alija@unite.edu.mk](mailto:gjylai.alija@unite.edu.mk)

### Abstract

Vitaminosis refers to a condition caused by an abnormal level of vitamins in the body, either excessive (hypervitaminosis) or deficient (hypovitaminosis). These imbalances can lead to a variety of health problems, ranging from mild to severe, depending on the vitamin involved and the degree of imbalance. Vitamin A is a fat-soluble retinoids, primarily retinol and retinyl esters essential for various physiological functions, including vision, immune defense, reproduction, and cellular communication. It exists in two primary forms: preformed vitamin A (retinol and retinyl esters) found in animal-derived foods, and provitamin A carotenoids (e.g., beta-carotene) present in plant-based sources. The vitamin is vital for the maintenance of epithelial tissues, growth, and the synthesis of rhodopsin, a protein necessary for low-light and color vision. Both deficiency (hypovitaminosis A) and excess (hypervitaminosis A) of vitamin A can cause significant health problems. Hypovitaminosis A is a leading cause of preventable blindness in children and increases morbidity and mortality from infectious diseases in developing countries. It commonly manifests as night blindness, xerophthalmia, and keratomalacia, progressing to complete vision loss if untreated. Risk factors include inadequate dietary intake, malabsorption disorders, and increased physiological demands during pregnancy and lactation.

Conversely, hypervitaminosis A results from excessive intake, often due to overconsumption of supplements or animal products rich in retinol, such as liver. Acute toxicity symptoms include nausea, dizziness, and intracranial pressure, while chronic toxicity may lead to liver damage, bone pain, and teratogenic effects in pregnant women. Unlike retinol, provitamin A carotenoids are less likely to cause toxicity but can result in benign conditions such as carotenemia.

Balancing vitamin A intake is critical for health. Addressing vitamin A deficiency through supplementation programs and food fortification has significantly reduced the burden of deficiency-related diseases in many regions. Nonetheless, excessive intake, particularly in high-income countries, warrants caution and public awareness. This abstract emphasizes the importance of maintaining appropriate vitamin A levels for optimal health while avoiding the risks associated with both deficiency and excess.

**Key words:** hypovitaminosis A, hypervitaminosis A, health problems

## THE IMPACT OF GLOBALISATION ON INTERNATIONAL MONETARY AND FINANCIAL POLICY : A LITERATUR REVIEW

**Uswatun KHASANAH**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0009-1640-9111>

**Hendri Hermawan ADİNUGRAHA**

Faculty of Islamic economics and business, UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

ORCID ID: <https://orcid.org/0009-0003-5488-8252>

### Abstract

The purpose of writing this article is to describe monetary economics. This research is a literature research with a qualitative approach. The data sources used in this research come from various literature journal articles that are relevant to the research topic. The data analysis method used is content analysis of the literature sources used in the research. Globalisation has brought significant changes in the way countries manage their economies and interact in the international arena. In the era of globalisation, international monetary and financial policies can no longer be viewed in isolation from the global context. Changes in one country can quickly impact other countries through increasingly close linkages in the global financial system. Therefore, it is important to understand how globalisation affects international monetary and financial policy. In the era of globalisation, international monetary and financial policies must be more adaptive and responsive to changes in the global economy. Central banks and governments must work together to manage risks and ensure sustainable economic and financial stability. International financial management is also becoming increasingly important in understanding and managing the risks associated with international financial transactions. With good international cooperation and appropriate policies, countries can maintain economic stability and growth in this era of globalisation. Successfully managing the impacts of globalisation will play an important role in shaping a more inclusive and sustainable future for the global economy.

**Keywords:** Globalisation, Monetary, Policies, International Finance.