

## Women in Agricultural Technical Education and Apprenticeship (WATEA)

Over 3000 Beneficiaries

Competency-based Technical Training

Internship and Apprenticeship Opportunities

Knowledge Transfer with French Agricultural Technical Schools

Certifications

Technical & Pedagogical Agribusiness Support



...Raising a New Generation of Female Agricultural Technicians

Donor: French Ministry of Europe and Foreign Affairs,  
through the Embassy of France in Nigeria

Lead Implementing Partner: International Institute of  
Tropical Agricultural (IITA)



# ANAMBRA STATE POLYTECHNIC (ANSPOLY) MGBAKWU



Presents

# 3<sup>RD</sup> INTERNATIONAL MULTI-DISCIPLINARY CONFERENCE

THEME:

**INNOVATION FOR SUSTAINABLE  
DEVELOPMENT IN A DIGITAL ERA**

Date:

**Tuesday 10th - Thursday 12th  
December 2024**

Mr Governor, Prof Charles Chukwuma Soludo,  
Presents 2nd prize to anambra polytechnic Mgbakwu,  
at grand finale of anambra innovation week on  
29/11/2024 at international conference center awka.



# Programme of Events

## DAY ONE

- 1) Arrival and Registration

## DAY TWO

- 1) Introduction by the Mc
- 2) Anthem
- 3) Prayers
- 4) Recognition Of Guests
- 5) Opening Remarks By The Chairman
- 6) Address By LOC Chairman
- 7) Breaking Of Kolanut
- 8) Address by the Ag. Rector
- 9) Keynote Speakers Address
- 10) Lead Presenters Address
- 11) Comments
- 12) Goodwill Messages
- 13) Musical Interlude Awards/ Citations
- 14) Responses
- 15) Closing Remarks / Group Photographs/ Interview/ Lunch First Breakout Session Technical Sessions

## DAY THREE

- 1) Arrival
- 2) Introduction
- 3) Breakout Technical Sessions
- 4) All Conference Luncheon
- 5) Departure

## NATIONAL ANTHEM

Nigeria we hail thee,  
Our own dear native land,  
Though tribe and tongue may differ,  
In brotherhood, we stand,  
Nigerians all, and proud to serve  
Our sovereign Motherland.  
Our own dear native land,  
Though tribe and tongue may differ,  
In brotherhood, we stand,  
Nigerians all, and proud to serve  
Our sovereign Motherland.  
Our flag shall be a symbol  
That truth and justice reign,  
In peace or battle honour'd,  
And this we count as gain,  
To hand on to our children  
A banner without stain.  
O God of all creation,  
Grant this our one request,  
Help us to build a nation  
Where no man is oppressed,  
And so with peace and plenty  
Nigeria may be blessed.

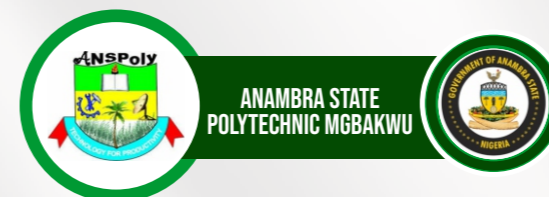
## NATIONAL PLEDGE

I pledge to Nigeria my Country  
To be faithful, loyal and honest  
To serve Nigeria with all my strength  
To defend her unity  
And uphold her honour and glory  
So help me God.



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## ANAMBRA STATE ANTHEM

With all our hearts  
We pray and ask  
God bless Anambra  
God bless the shining light that we  
bear  
We are the only ones to make her  
brighter  
The ones to make her better  
The only ones to make Anambra  
shine  
With our sweat and blood, Every  
breath of our lives

With trust in God  
We would lift our homeland high  
We believe in togetherness  
We'll build a land of progress  
Lift the spirit of Anambra  
Lift the spirit of Anambra  
Lift the spirit of Anambra, State we  
love.

## ANSPOLY ANTHEM

### Verse 1

In the heart of Mgbakwu, we rise so  
high,  
A beacon of learning, under the sky.  
With hands and minds, we build and  
strive,  
Anambra Poly, where dreams come  
alive.

### Verse 2

Through knowledge and skill, we shape  
our land,  
Empowered by vision, we take a stand.  
For progress and growth, we'll always  
fight,  
Anambra Poly, our guiding light.

### Chorus

Anambra Poly, our pride, our  
flame, Together we shine, in honor  
and name. With courage and  
wisdom, we'll lead the way, Anambra  
Poly, forever we'll stay!

### Chorus

Anambra Poly, our pride, our flame,  
Together we shine, in honor and name.  
With courage and wisdom, we'll lead the  
way,  
Anambra Poly, forever we'll stay!



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**HIS EXCELLENCY  
PROF. CHARLES  
CHUKWUMA SOLUDO**  
EXECUTIVE GOVERNOR OF ANAMBRA STATE  
(SPECIAL GUEST OF HONOUR)



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**PROF. NGOZI  
CHUMA-UDEH**  
HON. COMMISSIONER FOR EDUCATION  
**GUEST OF HONOUR**



ANAMBRA STATE  
POLYTECHNIC MGBAKWU



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**KEY NOTE SPEAKERS**



**PROF. LONGE OLUMIDE**  
VICE CHANCELLOR,  
WEST MIDLANDS OPEN  
UNIVERSITY LAGOS, NIGERIA.



**PROF. KATE AZUKA  
OMENUGHA** FMPR  
AG. VICE-CHANCELLOR,  
CHUKWUEMEKA ODUMEGWU  
OJUKWU UNIVERSITY

**LEAD PRESENTERS**



**PROF CHIDI ODINKALU**  
PRO-CHANCELLOR/ CHAIRMAN  
CHUKWUEMEKA ODUMEGWU  
OJUKWU UNIVERSITY



**MS CHINWE OKOLI**  
SPECIAL ADVISER ON INNOVATION  
AND BUSINESS INCUBATION,  
ANAMBRA STATE

**CHAIRMAN OF OCCASSION**



**PROF ELLIS IDEMOBI**  
PROFESSOR OF MANAGEMENT AND ENTREPRENEURSHIP AND FORMER  
DEPUTY VICE CHANCELLOR,  
CHUKWUEMEKA ODUMEGWU OJUKWU UNIVERSITY, IGBARIAM

**ROYAL FATHER OF THE DAY**



**HRH IGWE ISAAC  
SUNDAY OKAFOR**  
OGENE 1 OF OKPUNO



ANAMBRA STATE  
POLYTECHNIC MGBAKWU



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**PRINCIPAL OFFICERS OF ANAMBRA STATE POLYTECHNIC**



**DR NJIDEKA RITA CHIEKEZIE**  
**AG. RECTOR,**  
**ANAMBRA STATE POLYTECHNIC MGBAKWU.**  
**CHIEF HOST**



**DR. NJIDEKA RITA CHIEKEZIE**  
**AG. RECTOR**



**DR. (MRS) UDALLA EDITH NKECHI**  
**AG. REGISTRAR,**



**MR CLIFF N. NWOGWUGWU**  
**AG. LIBRARIAN**



**MR. TOBECHUKWU**  
**FRANCIS ONWUGBUFOR**  
**AG. BURSAR**



**UZONDU CHIKODIRI  
SCHOLASTICA PH.D (FICP)**

**CHAIRMAN LOCAL ORGANISING COMMITTEE (LOC)**

## LOC MEMBERS



**UZONDU CHIKODIRI  
SCHOLASTICA Ph.D (FICP)  
CHAIRMAN LOC**



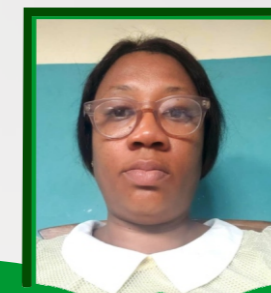
**DR. EKENE NWANKWO (JP), MNIM  
CHAIRMAN PUBLICITY/  
FUND RAISING**



**DTN IBEKWE  
IFEYINWA MAUREEN  
CHAIRPERSON :  
ENTERTAINMENT COMMITTEE**



**ENGR NGOZI ERNEST-OKOYE  
LOC CHAIRPERSON -  
EDITORIAL COMMITTEE**



**CHINENYE HELEN O. ABANA  
LOC SECRETARY**



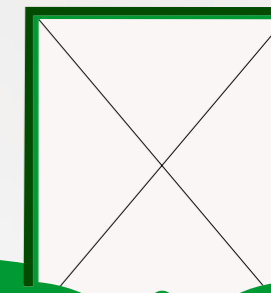
**ENGR EZEObI ONYEKA S.  
ICT CREW**



**DR. CHIMEZIE  
ADA UCHENU  
LOC MEMBER**



**DON IFEDIBA, mnfst, miica  
CHAIRMAN, PLANNING/  
LOGISTICS SUBCOMMITTEE**



**ENGR. JOHN NWOYE  
TECHNICAL CREW/  
ICT CHAIRMAN**



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**A WELCOME ADDRESS PRESENTED BY THE ACTING RECTOR, DR. NJIDEKA RITA CHIEKEZIE DURING THE 3<sup>RD</sup> INTERNATIONAL MULTI-DISCIPLINARY ACADEMIC CONFERENCE OF ANAMBRA STATE POLYTECHNIC, (ANSPOLY) MGBAKWU**

**PROTOCOLS**

Distinguished guests, esteemed speakers, participants, and members of the academic community,

I am honored to welcome you to Anambra State Polytechnic (ANSPOLY) Mgbakwu today for our 3<sup>rd</sup> international multi-disciplinary academic conference. ANSPOLY took off as a School of Agriculture, Igbariam in 1978; as an in-service training School for the staff of the Ministry of Agriculture. In 1981, it was elevated to College of Agriculture to award OND and HND in General Agriculture only. In 2007, the College was relocated to Mgbakwu to make way for the take off of Anambra State University, Igbariam campus, now Chukwuemeka Odumegwu Ojukwu University and by 2017, it was upgraded to a Polytechnic status. ANSPOLY, is the only state Polytechnic in Anambra state and is established by the Anambra State Polytechnic Mgbakwu Law 2017. Our vision is to be a leading Polytechnic of great reputation, with an outstanding and enviable academic standard, equipping students to be technologically skilled, morally-sound and entrepreneurial-minded. ANSPOLY aims to achieve excellence through promoting the acquisition of technological and academic competencies in a serene academic environment. It is important to mention that ANSPOLY is enlisted among the NBTE-approved Polytechnics in Nigeria offering National Diploma (ND) following the interim accreditation of twelve 2-year National diploma (ND) courses in four schools or faculties. The preparations for NBTE inspection visit and accreditation for the Higher National Diploma (HND) programmes are on. This is our major challenge presently.

Today, we gather to explore the intersection of innovation, sustainability, and digital technologies, and to discuss how we can drive development and create a better future for all. The connection between innovation and sustainability is becoming more and more obvious as we negotiate the challenges of the twenty-first century. The theme of this year's conference is "**Innovation for Sustainable Development in a Digital Era.**" and the primary purpose is to provide a platform for scholars, researchers, and experts to share their research findings, ideas, and experiences with a community of peers. Other objectives include knowledge sharing, dissemination of research outputs, networking and capacity building. Overall, academic conferences play a vital role in advancing knowledge, promoting innovation, and fostering collaboration within and across disciplines. We have come together at this conference to exchange ideas, experiences, and insights about how innovation may be used to promote sustainable development in the digital age.

This 3<sup>rd</sup> international multi-disciplinary conference features an impressive lineup of keynote speakers and lead presenters who will share their expertise and experiences on the theme of the conference. We have also planned a range of technical and interactive sessions. As we embark on this intellectual journey, I urge you all to engage actively and share your perspectives. Let us work together to co-create knowledge, identify innovative solutions, and develop actionable strategies for sustainable development in the digital era.

Before I conclude, it is pertinent to mention that today 16 personalities carefully selected would be given awards for their meritorious services. I would also like to express my gratitude to our sponsors, partners, and collaborators who have supported this conference. I would not fail to appreciate the hard work and dedication of our conference organizing committee, who have worked tirelessly to bring this event to fruition.

We appreciate everyone here and promise you that the time and energy spent at this conference would be rewarding and we pray that the Lord grant you all journey mercies back to your destinations at the end of this great event

Thank you all.



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**3RD INTERNATIONAL  
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**WELCOME ADDRESS BY THE CHAIRMAN,  
LOCAL ORGANIZING COMMITTEE**

Distinguished Guests, Esteemed Speakers, Honored Delegates, Respected Participants, Ladies and Gentlemen

With immense joy and a deep feeling of respect, I extend a warm greeting to everyone attending this much awaited conference at Anambra State Polytechnic (ASPOLY). Having this esteemed group of academics, professionals, and innovators from various fields is a privilege.

We have a singular chance to investigate the nexus of sustainable development, technology, and research as we come together today. This conference is expected to provide a forum for sharing innovative concepts, encouraging teamwork, and tackling the urgent problems facing science, technology, and innovation.

This year's conference theme, ***Innovation for Sustainable Development in a Digital Era***, reflects our shared dedication to identifying innovative solutions that may propel advancement and have a beneficial impact on our businesses, communities, and the wider globe.

We are optimistic that new collaborations, novel viewpoints, and a common vision for a more environmentally friendly future will be stimulated by the talks, presentations, and networking opportunities that will take place during this event.

My sincere appreciation goes out to our esteemed panelists and speakers who have kindly agreed to share their knowledge via our invitation. The unwavering support of our sponsors, awardees, and partners has been crucial in making this event a reality. Members and volunteers of the Local Organizing Committee deserve special recognition as well, as their commitment and diligence have taken us to this point.

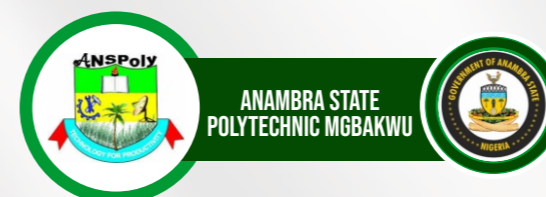
As we set out on this thrilling adventure, I urge everyone to participate completely, ask questions, exchange ideas, and work together. Let's collaborate to make a positive impact of innovation and advancement that goes much beyond this meeting.

Once again, I welcome you to ASPOLY and to this momentous occasion. May we all leave here enriched with knowledge, inspired by fresh perspectives, and motivated to contribute meaningfully to our respective fields and communities.

Thank you, and I wish you a productive and memorable conference.

Sincerely,

**Uzundu Chikodirin Scholatica ( Ph.D, FICP)  
Chairman, Local Organizing Committee  
Anambra State Polytechnic (ANSPOLY)**



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# Awards

## PROFESSIONAL SERVICE AWARD

1. Engr Ejike Ewim
2. Engr Raluchukwu Okeke
3. Bar B.E.I Nwofor
4. Mrs Chiamaka Nnake
5. Dr Nwabufo Nwankwo
6. Dr Victor Agummadu
7. Hon. Ossy Onuko
8. Engr (sir) Julius Mmelikam Chukwuemeka

## LIFE-TIME ACHIEVEMENT AWARD

1. Chief Solomon Nwachukwu
2. Chief Anthony Maduka

## ACADEMIC/ACHIEVEMENT AWARD

1. Prof. Ngozi Chuma- Ude

## HUMAN CAPITAL DEVELOPMENT AWARD

1. Alhaji Oba Abdulrazak Olaha (Eze Chinedu) Oba of yoruba Awka
2. High Chief Ikechukwu Ezeudu
3. Mr Obiekwe Edwin Anaso

## ACHIEVEMENT AWARD

1. Hon Esther Chinyere Onyekesi
2. Hon Chinedu Nwoye( Glamour)

## CHAIRMAN OF THE OCCASION

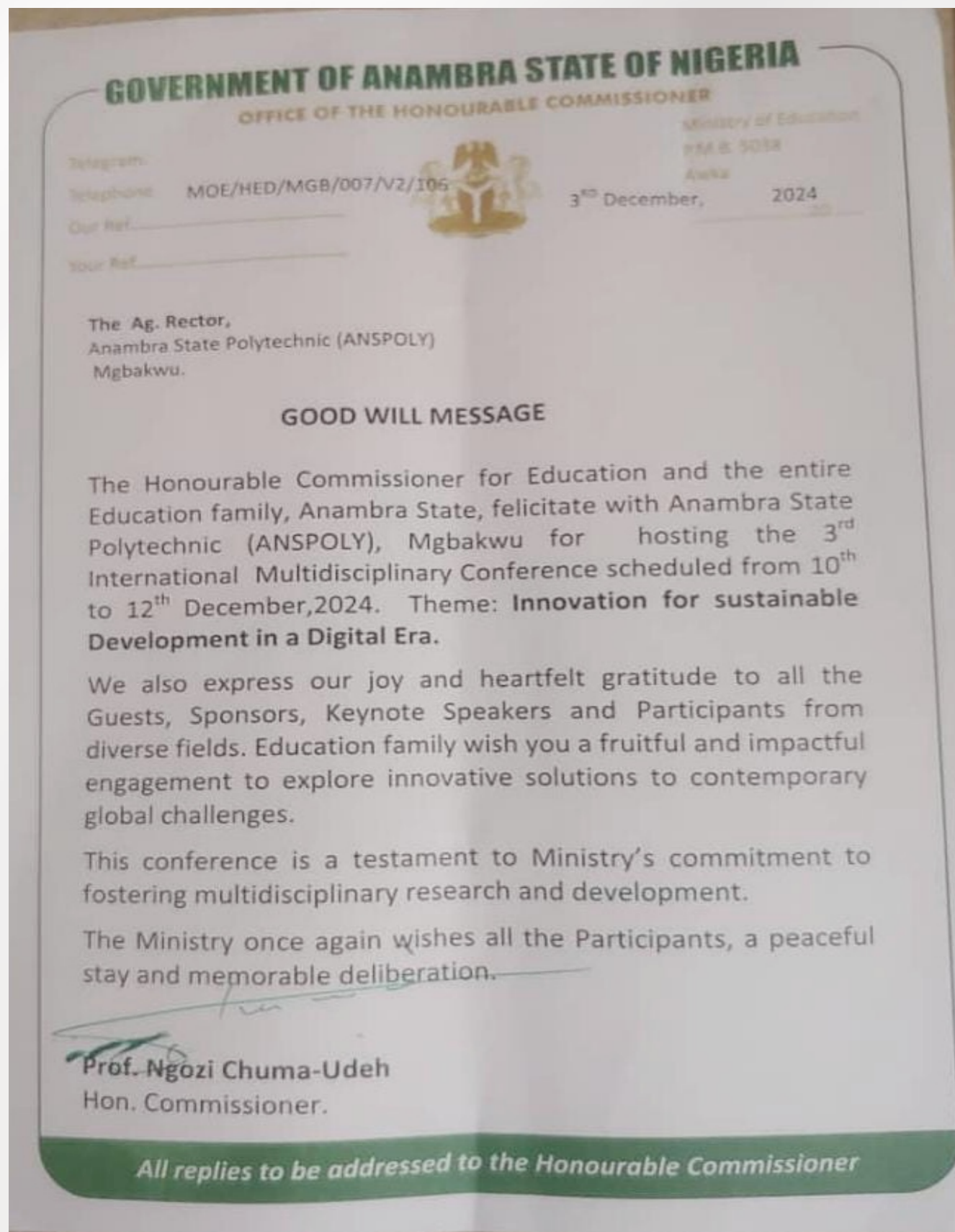
Prof. Ellis Idemobi

# Awardees





# Goodwill Message



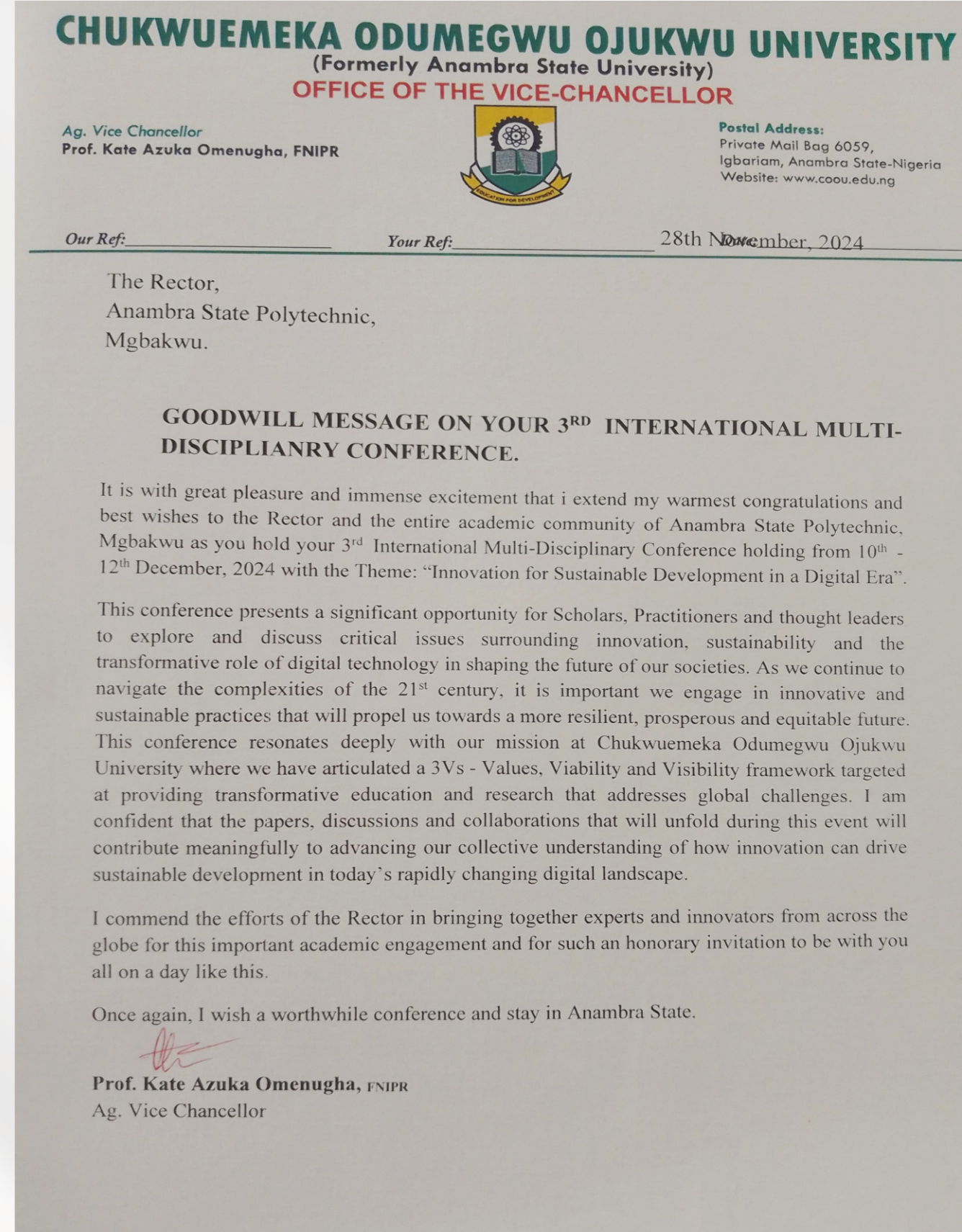
ANAMBRA STATE  
POLYTECHNIC MGBAKWU



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# Goodwill Message



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# Goodwill Message

## NWAFOR ORIZU COLLEGE OF EDUCATION, NSUGBE

### PROVOST:

**DR. JUSTINA C. ANYADIEGWU**  
Ph.D (Eng. Lang.)  
M. A. (Eng. Lang.)  
B.Ed (Language Arts/English)  
NCE (English/Social Studies)



P.M.B. 1734  
Onitsha,  
Anambra State

08036705306

provost@nocen.edu.ng  
justinaanyadiegwu@gmail.com

Ref:.....**NOCEN/OP/GWM/337 / / 131**.....

Date:.....**29<sup>th</sup> November, 2024**.....

The Rector,  
Anambra State Polytechnic,  
Mgbakwu.

### Goodwill Message to Anambra State Polytechnic, Mgbakwu

On behalf of the College Governing Council, Management and the entire College community, I wish to warmly congratulate Anambra State Polytechnic, Mgbakwu, on the occasion of your 3rd International Multidisciplinary Conference, themed Innovation for Sustainable Development in a Digital Era.

This conference could not have come at a better time, as the world seeks innovative solutions to address the challenges of sustainable development in a rapidly advancing digital age. By convening this conference, your institution demonstrates foresight and a deep commitment to shaping the future through collaboration, research, and the application of cutting-edge ideas.

The focus on multidisciplinary engagement aligns perfectly with the complexity of today's challenges, which require input from diverse fields of knowledge. I am confident that the outcomes of this gathering will generate actionable insights and practical solutions that will resonate far beyond the walls of this institution.

May this conference achieve its goals and further position Anambra State Polytechnic as a beacon of excellence in innovation and sustainable development.

Congratulations once again, and best wishes for a successful and impactful event.

Dr Justina Anyadiegwu  
PROVOST



# Goodwill Message



## FEDERAL POLYTECHNIC, OKO OFFICE OF THE RECTOR

**UBAKA, CHUKWUKEKWU .E**  
Ph.D. MBA, B.Sc. HND, FCTI, ACTI  
Email: [nnomgekwa@gmail.com](mailto:nnomgekwa@gmail.com)  
+234 8033918999, +234 8024764848  
website: [www.federalpolyoko.edu.ng](http://www.federalpolyoko.edu.ng)

P.M.B, 021, AGUATA  
ANAMBRA STATE,  
NIGERIA

OUR REF:.....**FPO/R/87/VOL.II/039**.....

DATE:.....**2<sup>nd</sup> December, 2024**.....

### GOODWILL MESSAGE

The Management, Staff and Students of Federal Polytechnic Oko felicitate with the Ag.Rector, Staff and Students of Anambra State Polytechnic Mgbakwu on the hosting of the 3<sup>rd</sup> International Multi-Disciplinary Conference of Anambra State Polytechnic Mgbakwu.

The theme of the Conference "Innovation for Sustainable Development in a Digital Era" is quite apt and fundamental to sustainable economic growth. We are hopeful the conference will achieve its aims and objectives and enhance learning and research.

On that note, I wish the Institution a fruitful and successful conference.

Dr. Ubaka Chukwuekwu

Ag. Rector



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MULTI-DISCIPLINARY CONFERENCE

# Goodwill Message

**GOVERNMENT OF ANAMBRA STATE OF NIGERIA**  
**MINISTRY OF SOCIAL WELFARE, CHILDREN AND WOMEN AFFAIRS.**

Phone: \_\_\_\_\_  
Your Ref: MWASD.PS/055/1/6  
Our Ref: \_\_\_\_\_



Dora Akunyili Women Development Center  
Awka.

Date: 29<sup>th</sup> November, 2024

Dr. Njideka Chiekezie  
Rector,  
Anambra State Polytechnic  
Mgbakwu.

**GOODWILL MESSAGE**

I am very pleased to congratulate you and the entire Anambra State Polytechnic Mgbakwu for organizing this year 2024 conference on the theme: **"INNOVATION FOR SUSTAINABLE DEVELOPMENT IN A DIGITAL ERA"**.

This theme is apt for this time and I believe the event will present a platform for various stakeholders to share the innovative ideas and knowledge that will impact positively to sustainable social economic development of our dear state.

Your leadership and commitment in ensuring academic excellence at Anambra Polytechnic is highly remarkable and significant, I applaud you for it.

I wish you more grace for higher exploit.

You will definitely have a successful year 2024 conference.

Accept my warmest regards.



**Mrs. Chinwe Achugbu**  
Permanent Secretary  
Ministry of Women & Social Welfare  
Anambra State.

*29/11/2024 16:2*


**All replies to be addressed to the Hon. Commissioner**

# Goodwill Message

**GOVERNMENT OF ANAMBRA STATE OF NIGERIA**  
**OFFICE OF THE STATE CHIEF OF PROTOCOL/DEPUTY CHIEF OF STAFF**

E-mail: [chinedu.nwoye@anambrastate.gov.ng](mailto:chinedu.nwoye@anambrastate.gov.ng)  
Tel: 08033229809

Your Ref: \_\_\_\_\_  
Our Ref: \_\_\_\_\_



Government House  
P. M. B. 5016  
Awka

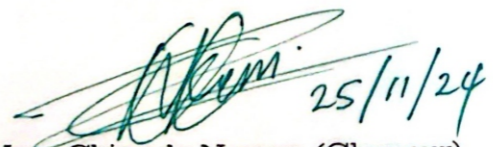
Date: 25/11/24

**GOODWILL MESSAGE**


I, Hon. Chinedu Nwoye (Glamour) would like to use this medium to felicitate with Anambra State Polytechnic (ANSPOLY) Mgbakwu on its 3<sup>rd</sup> International Multi-Disciplinary Conference. This year's Theme titled 'INNOVATION FOR SUSTAINABLE DEVELOPMENT IN A DIGITAL ERA'. I must commend the School's management for organizing this conference because Digital Innovation would help improve efficiency, prioritize sustainability and also accelerate progress in our society and the economy at large.

Looking at the programme for the days ahead of us, I can see that this conference will undoubtedly be informative and conducive to a better future for youths and Small and Medium Enterprises across the State and the Nation.

Please accept my heartfelt goodwill message and best wishes for a successful and trans formative Conference. May this event mark the beginning of a new chapter of growth and prosperity.

 25/11/24

**Hon. Chinedu Nwoye (Glamour)**  
State Chief Of Protocol/Deputy Chief Of Staff



**All replies to be addressed to the SCOP/DCOS**



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# Goodwill Message

## GOVERNMENT OF ANAMBRA STATE OF NIGERIA OFFICE OF THE SECRETARY TO THE STATE GOVERNMENT

E-mail:

Tel:

Your Ref:.....

Our Ref: SSG/PS/1/24



Government House  
P. M. B. 5036  
Awka

26<sup>th</sup> November, 2024

**Dr. Njideka Chiekezie**  
Rector,  
Anambra State Polytechnic,  
Mgbakwu.


### GOODWILL MESSAGE

I write to extend my heartfelt congratulations to you and the entire Anambra State Polytechnic community for organizing this year's conference titled: **Innovation for Sustainable Development in a Digital Era.**

This event promises to be a remarkable platform for sharing innovative ideas and fostering collaboration in the pursuit of sustainable development. Your leadership and commitment to academic excellence are truly commendable. Keep it up.

I am confident that this conference will offer valuable insights and contribute to the advancement of knowledge across diverse fields. I wish you and all participants' great success in this endeavor.

Warm regards

  
**Dr. Nwabufo Nwankwo**  
Permanent Secretary  
Office of the Secretary to the State Government

All replies to be addressed to the Secretary to the State Government



ANAMBRA STATE  
POLYTECHNIC MGBAKWU



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MULTI-DISCIPLINARY CONFERENCE

# Goodwill Message

**ICAN** THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA  
(Established by Act of Parliament No. 15 of 1965)  
**Awka and District Society**  
Chairman - 08033892313  
Secretary - 08067466900  
E-mail: awkadistrict@ican.ng  
Website: www.ican-ngr.org

C/o Obi Okechukwu & Co.  
73 Zik's Avenue  
Awka- Anambra State

Date: November 19, 2024

### GOODWILL MESSAGE

We felicitate with Anambra State Polytechnic (ANSPOLY), Mgbakwu on the occasion of her 3<sup>rd</sup> International Multi-Disciplinary Conference.

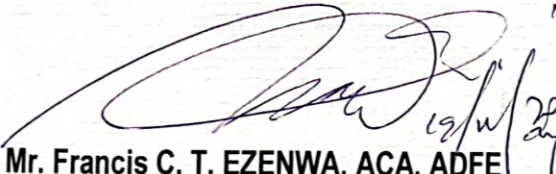
The Theme "Innovation for Sustainable Development in a Digital Era" is very apt as we believe it would lay a strong foundation towards achieving the developmental goals and objective of Prof. Chukwuma C. Soludo CFR, the Governor of Anambra State. Our world has gone digital and those yet living in the analog era have "missed the train".


We are confident that the keynote Speakers - Professors Longe Olumide and Kate Omenugha would do justice to the theme together with the Lead presentation by the renowned Prof. Chidi Odinkalu.

Our organizations have partnered greatly in the past, accordingly, we congratulate Dr. Njideka Rita Chiekezie - the Ag. Rector, in particular, our Professional Colleagues in your employ and the Polytechnic community in general on this auspicious occasion.

We look forward to greater partnership and collaboration.

Yours faithfully,

  
**Mr. Francis C. T. EZENWA, ACA, ADFE**  
District Chairman  
08063568402

  
**Mrs. Chiamaka EZEUGU, ACA**  
General Secretary  
07033985622



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POLYTECHNIC MGBAKWU



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# Goodwill Message



DR. DANIEL EJIKE EWIM  
— FOUNDATION —

26<sup>th</sup> November, 2024

## GOODWILL MESSAGE

I extend my heartfelt congratulations to the Ag. Rector and the entire Management of Anambra State Polytechnic, Mgbakwu, on the occasion of your upcoming conference. This significant gathering reflects your unwavering commitment to academic excellence and your dedication to fostering intellectual discourse that addresses contemporary challenges and inspires innovative solutions. Such events are vital platforms for the exchange of ideas, collaboration, and the advancement of knowledge, and I am confident that this conference will uphold these ideals. As you welcome scholars, researchers, and professionals from various disciplines, I wish you a successful and impactful conference. May it be marked by insightful discussions, productive engagements, and groundbreaking contributions that will further enhance the reputation of Anambra State Polytechnic as a hub of excellence. Once again, congratulations and best wishes for a successful conference.

Warm regards,

Engr Dr Daniel Ejike Ewim, FNSE, FNIPES

CEO: Dr. Daniel Ejike Ewim Foundation

26/11/2024



# Goodwill Message



His Royal Majesty  
Benson Chukwuka Ameke  
(Ifeadigo 1)



Tel. : +2348036652948 (Call, WhatsApp, Telegram & SMS); email- [anspolyroyalcabinet@gmail.com](mailto:anspolyroyalcabinet@gmail.com)  
Anambra State Polytechnic, P.M.B. 002, Mgbakwu  
Ref: ANSPOLY/RC/EDU/001 Date: 25<sup>th</sup> November, 2024

-----Igwe ANSPOLY-----

## GOODWILL MESSAGE TO THE 3<sup>RD</sup> MULTIDISCIPLINARY INTERNATIONAL CONFERENCE

On behalf of the Igwe-in-Council, I extend warm felicitations to the Management, Staff, and Students of Anambra State Polytechnic, Mgbakwu, on the occasion of their 3<sup>rd</sup> Multidisciplinary International Conference.

This conference, themed: **Innovation for Sustainability Development in a Digital Era** is a testament to the Polytechnic's commitment to academic excellence, research, and innovation.

We commend the Local Organising Committee for their tireless efforts in bringing together scholars, researchers, and industry experts from diverse backgrounds to share knowledge, ideas, and experiences.

As the traditional rulers of ANSPOLY Kingdom, we are proud to associate with this noble institution, which has consistently demonstrated its dedication to the advancement of education and human capital development in Anambra State.

We wish the conference participants fruitful deliberations, insightful presentations, and meaningful networking opportunities. May the outcomes of this conference contribute significantly to the growth and development of our nation.

Once again, we congratulate the Anambra State Polytechnic (ANSPOLY), Mgbakwu on this milestone event.

Long live Anambra State!  
Long live Anambra State Polytechnic, Mgbakwu!

HRM Chuka Ameke  
Igwe Ifeadijo 1 of ANSPOLY Kingdom



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# Goodwill Message

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**27<sup>th</sup> November 2024**

Ag. Rector,  
**ANAMBRA STATE POLYTECHNIC,**  
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Anambra State.

### LETTER OF GOODWILL MESSAGE

I am delighted to extend my warmest goodwill message to Anambra State Polytechnic on the occasion of your 3rd International Multi-Disciplinary Conference.

This conference is a testament to the institution's commitment to academic excellence, innovation, and community engagement. I commend your efforts in creating a platform for scholars, researchers, and industry experts to converge and share knowledge.

Please accept my best wishes for a successful conference. I am confident that the discussions and outcomes of this conference will have a lasting impact on the academic community and beyond.

Congratulations once again!

Sincerely,

Dr. David Peter Oaya  
**MD/CEO**

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E-mail: suakiresources@gmail.com



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# Goodwill Message



I extend my heartfelt best wishes to the **Rector and the entire management of Anambra State Polytechnic, Mgbakwu**, as you prepare for the upcoming **3rd International Multidisciplinary Conference**.

This conference is a testament to your commitment to fostering a culture of innovation, intellectual inquiry, and collaboration. It provides a vital platform for scholars, professionals, and researchers to exchange ideas, explore solutions to global and local challenges, and inspire meaningful progress in various fields.

The dedication and vision of the Rector and the organizing team are truly commendable, and I am confident that this event will not only achieve its goals but will also leave a lasting impact on the academic and professional communities.

May the conference be marked by insightful deliberations, productive collaborations, and significant outcomes that will further solidify Anambra State Polytechnic's role as a leader in education and research.

Best regards,

**Engr. Raluchukwu Okeke**  
(Chief Omemgbeoji 1)



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# Goodwill Message



Dear Rector and Management,  
I warmly congratulate Anambra State Polytechnic, Mgbakwu, on hosting the 3rd International Multi-Disciplinary Conference.  
This event reflects your dedication to fostering innovation and collaboration.  
Wishing you a successful and impactful conference.

**Hon. Ossi Onuko**  
**MD ACTDA**



ANAMBRA STATE  
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# Goodwill Message



Dear Rector and Management,  
I am delighted to extend my best wishes to Anambra State Polytechnic, Mgbakwu, as you host the 3rd International Multi-Disciplinary Conference.  
May the conference be a success and inspire meaningful contributions to global development.

Sincerely,  
**Lolo Ifeoma Vera Ekwezia Ezenwa**  
2192 Wayne Drive, Brentwood,  
94513, California, USA.



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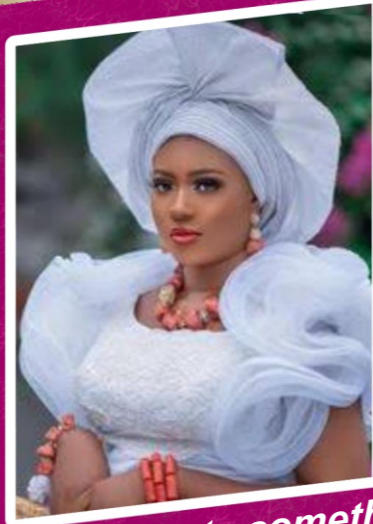
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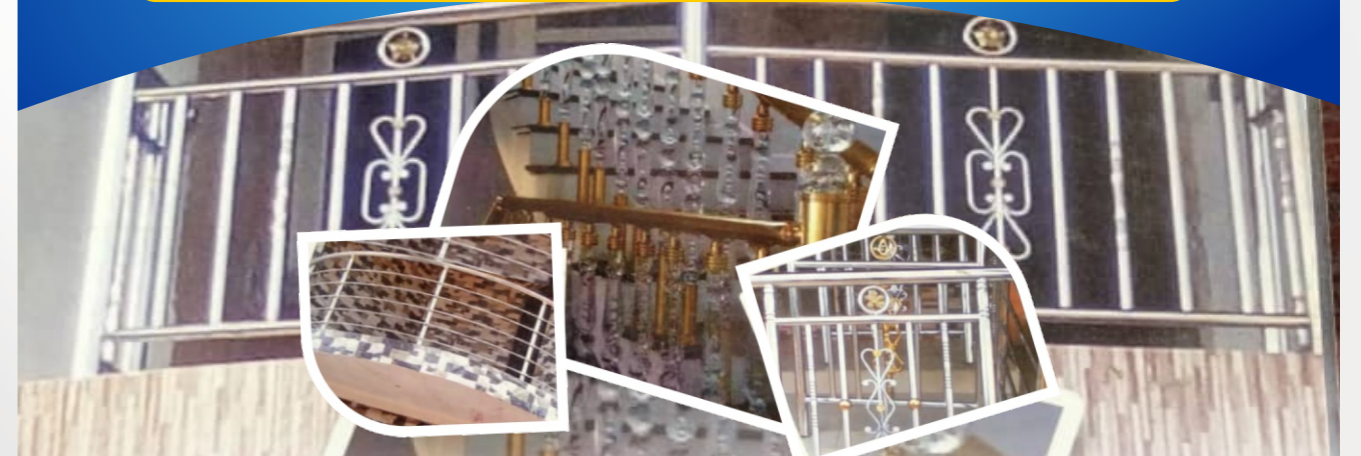
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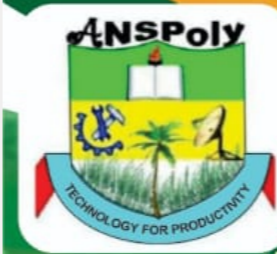


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# Abstract

## ACHIEVING SUSTAINABLE DEVELOPMENT OF BOTTLED WATER BUSINESSES IN NIGERIA THROUGH INNOVATIVE DIGITAL MARKETING PLATFORMS

- 1 Anetoh, John Chidume (Ph.D)
- 2 Anetoh (Ajakpo) Vivian Chioma (Ph.D)
- 3 Chendo, Nkoli Augustina (Ph.D)
- 4 Oranye, Helen Ijeoma (Ph.D)

1, 3, 4 Department of Marketing, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus, Anambra State, Nigeria. E-mail: jc.anetoh@coou.edu.ng, +2348035007835

2 Department of Accountancy, Anambra State Polytechnic Mgbakwu, Anambra State, Nigeria.

### ABSTRACT

This paper investigated the effect of innovative digital marketing platforms on sustainable development of bottled water businesses in Nigeria with a special reference to Anambra State. The paper aimed to ascertain how social media marketing platform, affiliate marketing platform, search engine platform, email marketing platform and mobile marketing platform contribute to the sustainable development of selected bottled water manufacturing firms in Anambra State of Nigeria. Relevant literature concerning the study variables was reviewed. A descriptive research design was employed using a survey method. The methodology was utilized to address the objectives of the research. The hypotheses formulated to guide the study were tested using the structural equation modeling statistical technique at 0.05 level of significant. The findings showed that social media marketing platform has significantly and positively lead to sustainable development of bottled water manufacturing firms. The findings revealed that affiliate marketing platform has significant and positive effect on sustainable development of bottled water manufacturing firms. The study found that search engine marketing platform has significantly and positively lead to sustainable development of bottled water manufacturing firms. The findings revealed that email marketing platform has significant and positive effect on sustainable development of bottled water manufacturing firms. The study found that mobile marketing platform has significantly and positively lead to sustainable development of bottled water manufacturing firms. Given the significant and positive effects of innovative digital marketing platforms on the sustainable development of bottled Water firms in Anambra State of Nigeria, the paper recommended that innovativeness on digital marketing strategies should be sustained.

**Key words: Innovative Digital Marketing Platforms, Sustainable Development, Bottled Water**

## EFFECT OF SUSTAINABLE SUPPLY CHAIN MANAGEMENT IN MARKETING COOPERATIVE THROUGH DIGITAL SOLUTIONS IN ANAMBRA STATE, NIGERIA.

- 1 Attah, Chinyere Cecilia  
(E-mail: attahchy@gmail.com)
- 2 Uzundu Chikodiri Scholastica (PhD)  
Department Of Cooperative Economics and Management.  
Anambra State Polytechnic, Mgbakwu. Anambra State.

### Abstract

This study empirically examine the effect of sustainable supply chain management in marketing cooperative through digital solutions in Anambra State, Nigeria. The specific objectives were; to examine the effect of planning and sourcing in marketing cooperative through digitalization in Anambra State, to evaluate the relationship between manufacturing, delivery and returns in marketing cooperatives through digitalization in Anambra state. The study is anchored on collective action theory. The study adopted a descriptive survey research design in order to obtain relevant and adequate information from respondents. The population for the study was 121,065 members. The sample size of 348 was determined using Taro Yamani formula. The simple random sampling technique was adopted in questionnaire distribution. The data collected was analyzed using simple descriptive statistics such as frequencies, percentages and averages. Inferential statistics used was multiple regression analysis. Also tabular analysis was extensively employed to present data and make comparisons of data. The result of the study showed that sustainable supply chain management phases and marketing challenges are drivers of digitalization success; and also operational task innovation has been a challenge among the marketing cooperative societies. The study therefore concludes that the management in marketing cooperatives should have technical prowess and commitment in order to foster positive changes within the global supply chain land scope and local communities in Anambra State. The study recommended that management committees' in cooperatives should strive for larger performance in terms of operational efficiency and innovation in other to achieve the set objectives.

**Keywords: Sustainability, Supply chain, Management, Marketing Cooperatives, Digitalization.**

## FIRM ATTRIBUTES AND CONSERVATIVE ACCOUNTING IN NIGERIA: PANECIA FOR SUSTAINABLE DEVELOPMENT IN A DIGITAL ERA.

- 1 Orjinta, Hope Ifeoma (Ph.D)
  - 2 Prince Chinedu Okeke 2 (Ph.D)
- 1-2 Department Of Accountancy Faculty of Management Sciences,  
Chukwuemeka A Odumegwu Ojukwu University Igbariam Campus, Anambra State  
Email: Ifyorjinta@gmail.Com  
Orcid No: <https://Orcid.Org/0000-0002-0531-8056>

### Abstract

This study examines how different attributes of consumer firms can enhance conservative accounting for a sustainable development in this digital era in Nigeria. The study employed ex-post facto and longitudinal research design. The study relies on secondary data derived from various consumer goods companies' financial statements and the Nigerian Exchange fact book to determine and measure the level of applicability of conservative accounting by various firms in corporate financial statements, applying an all-inclusive multivariate analysis. Samples of 15 consumer goods firms quoted in Nigeria Exchange Group were used for the period of ten (10) years spanning 2014 to 2023. The secondary sources of data were collected from annual reports of the selected consumer goods companies and three (3) specific objectives and hypotheses were subjected to some preliminary data tests like descriptive statistics, Pearson correlation analysis and variance Inflation Factor and were tested and analyzed using panel least regression analysis. The empirical analysis using a total of 150 firm-year observations, shows that firm profitability has positive and significant effect on conservative accounting which was statistically significant at 5% level of significance to ensure sustainable development in a digital era while capital intensity has negative and significant effect in maintaining application of conservative accounting in Nigerian consumer goods which was statistically significant at 5% level of significance. We also discovered that firm leverage has negative but insignificant effect on conservative accounting application among consumer goods firms in Nigeria. In line with the above findings, this study therefore recommends among others that, management of consumer goods firms in Nigeria should increase their profitability base to be more conservative in accounting while excess investment in non-current assets should be minimized in order to improve their application of conservative accounting for a sustainable business development in this digital era of technological enhancement. Generally, managers should have knowledge and understanding of accounting to apply appropriate policies to minimize risks in the business process.

**Keywords: Conservative accounting, firm capital intensity, leverage, profitability, Nigeria firms**  
**JEL Classification Number-G6000.**

## THE IMPACT OF DIGITAL TRANSFORMATION AND SUSTAINABILITY IN SMALL AND MEDIUM ENTERPRISES: A COMPREHENSIVE ANALYSIS

- 1 Uzundu Chikodiri Scholastica. Ph.D, FICP  
[Chikaogbogu22@gmail.com](mailto:Chikaogbogu22@gmail.com) 08034244461
- 2 Attah Chinyere Cecilia  
1-2 Department of Cooperative Economics and Management  
Anambra State Polytechnic, Awka.

### Abstract

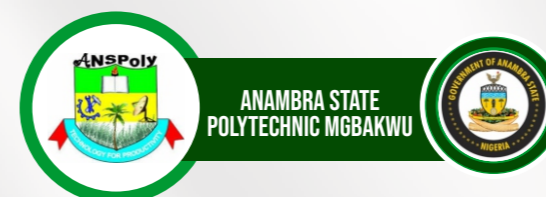
This study aim to identify the impact of digital transformation (DT) and sustainability (SUS) practices within small and medium enterprises in Nigeria. The study explores the dimensions of operational performance, customer engagement, and financial outcomes of Small and Medium Enterprises (SMEs) and how digital transformation initiatives impact these aspects. Data was collected from 200 SMEs and analyzed using statistical techniques such as t-tests, ANOVA, and regression models. The findings reveal significant positive correlations between the adoption of DT and SUS practices and improved SME performance metrics, while also highlighting the disparities in adoption levels across regions. The study recommended that SMEs prioritize investments in digital transformation initiatives to benefit from the positive impact they can have on economic, social, and environmental development outcomes.

**Keywords: Digital Transformation, Sustainable Development Small and Medium-sized Enterprises (SMEs), Economic Development.**



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## ACHIEVING SUSTAINABLE DEVELOPMENT OF LISTED DEPOSIT MONEY BANKS IN NIGERIA THROUGH CREDIT RISK MANAGEMENT.

Ajakpo (Anetoh) Vivian Chioma (Ph.D) 1  
Anetoh John Chidume (Ph.D) 2  
Okafor Clara Nkem 3  
Anyadufu Anthony Onyeka 4  
Chiekezie Chimaobi Johnson 5

1,4 Department of Accountancy, Anambra State Polytechnic Mgbakwu, Anambra State Nigeria.anetohvivian@yahoo.com, +2347038510196 (Corresponding Author).

2Department of Marketing, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus,

3 Department of Accountancy, School of Financial Studies, Federal Polytechnic Oko, AnambraState,

5 Student Affairs Department, Anambra State Polytechnic Mgbakwu.

### ABSTRACT:

Sustainable development has become a topical issue in the 21st century due to climate change and environmental degradation, which has spurred the implementation of sustainable development by deposit money banks in Nigeria. Sustainable development has become a global issue raising awareness towards environmental, social and financial aspects. This study examined the effect of credit risk management on sustainable development of listed deposit money banks in Nigeria. The study adopted an Ex-post facto research design. Secondary data extracted from the financial statements were analyzed using descriptive and inferential analyses. The study found that credit risk management (CRM) proxied by Non-Performing Loan (NPL) and Loan Deposit Ratio (LDR) had a positive significant effect on sustainable development of listed DMBs in Nigeria. The study concluded that credit risk management has a positive significant effect on sustainable development of listed DMBs in Nigeria. This study recommended among others that bank management of deposit money banks should devise risk management mechanism to reduce the level of nonperforming loans for sustainable development of deposit money banks in Nigeria.

**KEYWORDS:** Credit risk management, Non-performing loan, Loan deposit ratio, Sustainable development, Deposit money banks, Nigeria

## EFFECT OF GRANT FUNDING ON ENTREPRENEURS IN AWKA, ANAMBRA STATE. NIGERIA

Uchenu, Chimezie Adamma PhD  
Department of Accountancy  
Anambra State Polytechnic, Mgbakwu

### Abstract

This study examined the effect of Grant Funding on Entrepreneurs in Anambra State. The study adopted a survey research design. The population of the study comprised of all entrepreneurs in Awka capital territory who have been in business for at least 2 years. Two hundred and fifty (250) entrepreneurs were determined using Cochran's (1977) sample size formula and purposive sampling technique was used to select the respondents for this study. The study utilized questionnaire for data collection. The data collected for the study was analyzed using Partial Least Square Structural Equation Modeling was used in determining the measurement, structural models and hypotheses testing through Smart PLS 3.0 software. The study found that crowd funding Grant has positive and insignificant effect on Business startup among entrepreneurs in Awka, Anambra, Nigeria. While Social Venture capitals Grant has positive and significant effect on Business start Up among entrepreneurs in Awka, Anambra State. Based on the findings, it is concluded that Crowd Funding Grant positively but insignificantly influence Business Startup among Entrepreneurs in Awka, Anambra Nigeria. While Social Venture capitals Grant positively and significantly influences Business Start-Up among entrepreneurs in Awka, Anambra Nigeria. The study thus recommended among others that those in charge in disbursement of crowd funding in Nigeria specifically, Awka should improve on the disbursement of the said Grant by targeting entrepreneurs, increase the number of the beneficiaries reasonable and regularly organize programmes that will create more awareness on grant and how to access it.

**Keywords:** Entrepreneurship, Grant Funding, Crowd Funding and Social Venture Capitals.

## LITERATURE AND SOCIAL ENTREPRENEURSHIP IN THE DIGITAL AGE: A STUDY OF CHIMAMANDA ADICHIE'S AMERICANAH.

Ike, Peace Adaobi

Anambra State Polytechnic, Mgbakwu, gosilight00@gmail.com

The awesome development of Information Communication Technology in recent years has transformed various fields of study and literature is not left out. This paper explores the intersection of social entrepreneurship and the digital age, using Chimamanda Adichie's Americanah as a case study. Through a close investigation of Ifemelu, the protagonist, the paper explores the act of leveraging digital platforms in enhancing social change and stimulating social justice in Nigeria and beyond as a blogger and a cultural campaigner. In exploring this connection between social entrepreneurship and digital age, the paper highlights the author's portrayal of the challenge and prospects encountered by social entrepreneurs in leveraging technology to create positive societal influence. The methodology for this investigation involves a close reading and analysis of the novel, Americanah and evaluating the way Ifemelu uses her blog and social media platforms in addressing issues of race, identity and social injustice in Nigeria and United States of America. The paper is analysed using Afrocentrism theory which involves literary analysis of the representation of diaspora black experiences and interpretation of African diasporic texts.

**Keywords:** Social entrepreneurship, digital age, social media, social change and literature.

## MICROBIOLOGICAL ASSESSMENT OF COMMON SNACKS SOLD AT AFIKPO, EBONYI STATE.

1 Ezeogo J.I

ji.ezeogo@fpi.edu.ng; 08063104525

2 Onyeneke E.A.

1-2 Department of Science Laboratory Technology, Federal Polytechnic Ngodo-Isuochi, PMB 300 Isuochi, Umunneochi L.G.A. Abia State, Nigeria.

### ABSTRACT

Snacks are ready-to-eat (RTE) foods and are often regarded as street foods. In this study, five different snacks purchased randomly from different vendors were subjected to standard microbial analyses using the pour plate technique to ascertain their microbial status. This was carried out in the three days, in the morning and in the evening. The results obtained showed that the samples (snacks) had varying levels of microbial counts especially when sampled in the evening. The highest total aerobic count (TAC), total coliform count (TCC) and total fungal count (TFC) recorded were  $6.2 \times 10^3$  cfu/g,  $1.9 \times 10^2$  cfu/g and  $3.8 \times 10^2$  cfu/g respectively. In the morning, the isolated micro-organisms and their percentage prevalences were: *Bacillus sp* (40%), *Staphylococcus aureus* (100%), *Pseudomonas sp* (60%), *Enterobacter sp* (40%), *Serratia sp* (20%), *Escherichia coli* (60%), *Penicillium sp* (60%), *Aspergillus sp* (80%), *Fusarium sp* (40%) and *Rhizopus sp* (60%). The percentage prevalence of these isolates from the samples in the evening were: 80%, 100%, 80%, 40%, 60%, 60%, 60%, 80%, 40% and 60% respectively. There was generally an increase in the microbial composition of the samples in the evening. The presence of these micro-organisms in these samples (snacks) have some health and environmental implications. Some of these organisms have been implicated as the causative agents of some diseases and also as agents of environmental contamination. There should be a concerted effort to ensure that these ready to eat food are produced and distributed for consumption with minimal microbial contamination as their presence constitutes a public health hazard.

**KEYWORDS:** Ready-to-eat foods, Micro-organisms, Health, Contamination, Consumption.

## SOLUTION OF INTEGRAL PROBLEMS OF ACTUARIAL MATHEMATICS BY THE METHOD OF SUCCESSIVE APPROXIMATIONS

1 Okoli, Obuikem A,

2 Anumudu, Romanus N

1,2 GNS Unit, Anambra State Polytechnic, Mgbakwu. Anambra State, Nigeria.

### Abstract

We study the basic integral equation of actuarial mathematics for the probability of non-ruin of financial institution regarded as a function of the initial capital. Necessary and sufficient conditions for the existence of a solution of this problem and conditions for the uniform convergence were established by the method of successive approximations.

**Key words:** Uniform Convergence, Distribution Function, Financial Institution



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**HARNESSING DIGITAL GOVERNANCE AND CYBER SECURITY FOR SUSTAINABLE DEVELOPMENT IN NIGERIA:  
ALIGNING WITH THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)**

1 Ajayi Babatunde Michael  
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2 Bankole Abimbola Mary  
3 Harrison Gideon Chimezie  
1-3 Ekiti State Polytechnic, Isan-Ekiti, Ekiti State, Nigeria

**Abstract**

*This paper explores the area of digital governance and cyber security for their role in fostering attainment of sustainable development in Nigeria at a level coherent with the goals of the SDGs. This qualitative research focuses on undertaking an in-depth case study of the existing policies in Nigeria within the realm of digital governance, frameworks of governance, and cyber security strategies. Indeed, even though incredible strides have been made by Nigeria in both digital innovation and governance, the most persistent challenges in the areas of cyber security and digital inclusivity remain in the realm of rural and underserved communities. Such gaps stifle the full digital transformation of Nigeria and its full potential in leveraging technology for sustainable growth. It is against this background that this paper makes a call for broad policy measures: strengthening cyber security frameworks, better public-private partnerships, and more digital literacy activities. These are needed to ensure that Nigeria's digital ecosystem effectively supports sustainable development in ways that contribute toward the attainment of the wider SDG imperatives.*

**Keywords:** Digital governance, cyber security, sustainable development, digital transformation, digital policy, Sustainable Development Goals (SDGs).

**THE INTERSECTION OF DIGITAL POLICY AND CYBER SECURITY: IMPLICATIONS FOR SUSTAINABLE  
DEVELOPMENT**

Ifeyinwa Nkemdilim Obiokafor  
Department of Computer Science Technology, Anambra State Polytechnic, Mgbakwu,  
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**Abstract**

*As the world becomes increasingly interconnected through digital infrastructure, the nexus between digital policy and cybersecurity emerges as a critical area of concern, particularly for sustainable development. This paper explores the intersection of digital policy and cybersecurity, focusing on their implications for achieving sustainable development goals (SDGs). With the growing reliance on digital technologies, safeguarding data, infrastructure, and services through robust cybersecurity measures is essential. Concurrently, digital policy plays a vital role in creating an enabling environment for secure, inclusive, and sustainable digital transformation. The study argues that well-structured digital policies, aligned with robust cybersecurity frameworks, can foster innovation, protect critical infrastructure, and promote sustainable economic, social, and environmental development. This study employs a mixed-methods approach, combining literature review, policy analysis, and case studies to investigate how the interplay between digital policy and cybersecurity affects the achievement of sustainable development objectives. The paper concludes with policy recommendations for harmonizing digital policy and cybersecurity to support global sustainable development efforts.*

**Keywords:** Digital policy, cybersecurity, digital transformation, critical infrastructure, data protection, SDGs.

**IMPACT OF DIGITALISATION ON SMALL AND MEDIUM ENTERPRISES IN ANAMBRA STATE**

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**Abstract**

*The influence of digitalization on small and medium-sized businesses in Anambra, Nigeria, was examined in this study. Most people agree that small and medium-sized businesses are essential to every country's economic growth, and Nigeria is no exception. In actuality, the wave of digitalization is seen as the start of a whole new age in business and general life rather than a passing trend. Among its goals, this report looked at the prospects, necessity, and difficulties of small and medium-sized businesses' digitalization. The study utilised both the primary and secondary source of data collection and made use of the chi square to test its hypothesis. Findings in the study however showed that digitalisation has a great impact on Small and Medium Enterprises of Nigeria as it automates the product and process as a result of which both quality and production increases. Despite their great potential for future expansion, Anambra small and medium-sized businesses are reported to face a number of difficulties, including a dearth of training in digital strategy, a failure to use digital technology for business, and a lack of secure cybersecurity intelligence, among other issues. The fundamental tenet of digitalization is to fully utilize information and communication technology capabilities to access global resources and benefit society at the same time. Small and medium-sized businesses are crucial to the economy's employment of its population, which helps startups seize expansion prospects in the process of digitalization.*

**Key words:** digitalisation, ICT; impact; Nigeria; SMEs; small and medium enterprises;

**FROM DIGITALIZATION TO SUSTAINABLE GROWTH: THE IMPACT OF TECHNOLOGY ON SOCIAL  
ENTREPRENEURSHIP**

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**Abstract**

*This paper discusses and presents how technology brought transformation to social entrepreneurship, considering the use of digital tools in adding value to goods, products, and services of Small and Medium-Scale Enterprises (SMEs). It leverages insights from a wide variety of scientific disciplines into technology that forms the foundation of the entrepreneurial landscape, opening up new avenues for expansion never before witnessed. Current literature has been used to identify how Information and Communication Technologies (ICTs) have unlocked new avenues of success for the SMEs. More important, it identifies the essential set of digital tools required by successful entrepreneurship and mentions how they may be put to use for the creation of added value. This paper builds an insight into how technology interfaces with social entrepreneurship and highlights the strategic use of digital resources in pursuit of sustainable business development.*

**Keywords:** Technology, Social Entrepreneurship, Digital Tools, SMEs, Innovation, Sustainable Development.

**DETERMINANTS OF AGRICULTURAL CREDIT ACCESS AMONG MEMBERS OF FARMERS COOPERATIVE SOCIETIES  
IN ANAMBRA STATE.**

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**Abstract**

*Agricultural credit is believed to play a crucial role in enhancing agricultural productivity; however, access to*



agricultural credit remains a major challenge to members of cooperative multipurpose farmers in Anambra state. To investigate this phenomenon, this study examined the determinants of agricultural credits access among members of farmers multipurpose cooperative societies in Anambra state. The study was carried out in three agricultural zones in Anambra state, Nigeria. A multi stage random sampling technique was used to arrive at a sample size of twenty four cooperative societies with a membership strength of 337 farmers as sample size. The instrument for data collection was a set of structured questionnaire on a 5-point likert-scale Data was analyzed using and the multiple regression models. Model results indicated that Age of farmers significantly (3.00),  $t(285) = 13.96, 12.65$  and  $2.00$ ; and  $p$ -values = .000, .000 and .047 have effect on agricultural credit access and Educational level significantly (3.00),  $t(285) = 23.98, 13.13$  and  $20.63$ ; and  $p$ -values = .000, respectively have effect on agricultural credit access. In line with the finding of this study, it is recommended that young and vibrant youth should be encouraged to go into farming as agricultural credit will be easier for them to access when they are young rather than in their later years.

**Keywords; Agricultural credit, cooperatives, access, determinants, educational background**

#### INTEGRATING SMART PHONE INTO AUTOMOBILE SCREW JACK.

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#### Abstract

This project focuses on the development of an automated screw jack system controlled through a smartphone interface for convenience, safety, and efficiency. It consists of a 12V DC electric motor, microcontroller-based control circuitry, and a power screw made of high-strength steel. The major problem addressed in this project is that the operation of screw jacks is mostly manual and may be cumbersome and not safe, especially when heavy vehicles are being lifted. This therefore calls for an automatic screw jack to be developed for lifting loads up to 1000 kg at an average lifting speed of 10 seconds for a 20 cm elevation. The features were complimented by other safety features such as load monitoring, anti-drop mechanisms, and an emergency stop function. The approach involved in this project encompasses design, fabrication, and testing. Performance tests focused on speed, load capacity, and reliability of operation. Tests showed that with this system, there was the possibility of its running continuously for over 50 lifting cycles without failure, lifting heavy loads efficiently while maintaining safety. Further convenience and usability were added to the system by the inclusion of the Web Interface. The automated screw jack will be an incredibly significant upgrade over the conventional jacks in terms of offering a safer, more efficient, and user-friendly operation in performing vehicle maintenance and repair tasks. Results of this project showed that it is possible to perform further optimizations related to load capacity and power consumption.

**Keywords: Automatic Screw Jack, Electrical Motor, Vehicle lifting, Microcontroller, Smart phone control, Power screw.**

#### THE PHYTOCHEMICAL ANALYSIS AND THE ETHANOLIC EFFECT OF BEETROOT (Beta vulgaris) EXTRACT ON WEIGHT CHANGES IN ALBINO RATS.

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#### ABSTRACTS

This study was designed to assess the phytochemical properties, and the ethanolic effects of beetroot extract on weight changes in albino rats. The plant sample (Beta vulgaris) was purchased and was taken to Laboratory for analysis. It was washed, peeled, and dried for 20 minutes in the oven. It was ground using electric blender to fine particles. The sample was soaked in 30% ethanol for 24 hours, after which the extract was filtered and transferred into conical flask ready for test. Fifteen (15) healthy male albino rats of average weight ranges from [4.5 - 6.6 grams] were obtained and divided into three groups, five (5) for each group. The phytochemical results showed the presence of Saponin, flavonoid, alkanoid, tannin and absence of Steroid. From the result on effects of beetroot extract on weight changes; the average body weight of the animals when administered the extract orally with doses of 20ml, 50ml, and 100ml respectively within a space of three weeks were significantly decreased when compared to the control group. This observation suggests that the plant helps to prevent weight gain in the rats, which can be effective for the control/treatment of obesity.

**Keywords: Phytochemical, Beta Vulgaris, Analysis, Albino Rat, Obesity.**

#### CAPITAL EXPENDITURES AND NIGERIA'S EXTERNAL DEBT PROFILE

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#### Abstract

The study ascertained the relationship between capital expenditures and Nigeria's external debt profile from 2014 to 2023. Data for the study were collected from Central Bank of Nigeria (CBN) statistical bulletin, National Bureau of Statistics (NBS) Report and Debt Management Office (DMO). Data were analyzed using correlation analysis model. The result showed that there is a weak positive and non-significant relationship between capital expenditure on education and Nigeria's external debt. With a P-value of 0.517, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of 0.249% which indicates that increase in capital expenditure on education weakly increases nation's external debt by 24.9%. It also revealed that there is an insignificant and weak negative relationship between capital expenditure on transport sector and Nigeria's external debt. With a P-value of 0.437, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of -0.260% which indicates that increase in capital expenditure on agriculture decreases Nigeria's external debt by -27.8%. It also showed that there is an insignificant and weak negative relationship between capital expenditure on power sector and Nigeria's external debt. Having shown a P-value of 0.866, the test is considered statistically insignificant at 5% level. This could be verified with the coefficient of correlation of -0.031% which indicates that increase in capital expenditure on health care decreases Nigeria's external debt by -3.1%. The study recommends among others that government at all levels should only seek external borrowing when vital priority projects are being considered and should equally place a limit on external borrowing.

**Keywords: Health care, transport sector, power sector, external debt.**

#### STRATEGIES FOR DATA PROTECTION AND PRIVACY IN ADMINISTRATIVE INFORMATION SYSTEMS

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#### Abstract

In the modern digital era, administrative information systems (AIS) have become essential for managing organisational operations, facilitating decision-making, and supporting administrative tasks. These systems often handle large volumes of sensitive data, including personal information, financial records, and operational reports. Protecting this data is paramount for preventing breaches, ensuring compliance with legal frameworks, and maintaining user trust. This research examines the intricate strategies and methodologies for implementing robust data protection and privacy measures in modern administrative information systems. We examine current best practices, regulatory frameworks, and emerging technologies that organisations can use to protect sensitive data while remaining operationally efficient. This research explores strategies for data protection and privacy in AIS, reviewing technical, organisational, and policy-oriented solutions. It emphasizes the importance of encryption, access control, data anonymisation, and compliance with data protection laws, such as the General Data Protection Regulation (GDPR). Furthermore, this paper examines emerging technologies, such as blockchain and AI, and their potential impact on improving data privacy in administrative systems. The research introduces a novel multi-layered protection framework that integrates technical controls, organisational policies, and human factors. Our findings demonstrate that successful data protection requires a holistic approach that combines advanced technology implementation with strong organisational governance and continuous improvement processes.

**Keywords: Data Protection and Privacy, Administrative Systems, Information Security**



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## EFFECT OF RISK MANAGEMENT ON PROFITABILITY OF DEPOSIT MONEY BANKS IN NIGERIA

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### Abstract

This study examine the effect of risk management on profitability of deposit money banks in Nigeria, drawing data from five selected deposit money banks quoted on the Nigerian Stock Exchange. The study utilized secondary data obtained from audited annual reports covering eight year accounting period from 2015-2023 and using four independent variables (LIQSK, CRISK, CARSK and OPRSK). Ex-post facto research design was employed and Purposive sampling technique used to obtain a sample size of five (5) companies. The data was analyzed using ordinary least square regression technique at 1% level of significance. The result of the analysis showed that Liquidity risk has a positive and significant effect on return on assets of selected deposit money banks in Nigeria (t-value = 9.801, p-value < 0.01); Credit risk has negative and significant effect on return on assets of selected money deposit banks in Nigeria (t-value = -9.50, p-value < 0.01); capital adequacy risk has positive and significant effect on return on assets of money deposit banks in Nigeria (t-value = 10.93, p-value < 0.01); Operational risk has positive and significant effect on return on assets of selected money deposit banks in Nigeria (t-value = 9.517, p-value < 0.01). Based on the findings, the study therefore, concludes that risk management has a significant effect on profitability of deposit money banks in Nigeria. The study recommends that the regulatory agencies responsible for maintaining financial reporting quality like the SEC, CBN FRC should device a means of monitoring financial statements of reporting organizations (banks in particular) annually.

**Keywords:** Risk management, Profitability, Deposit money banks.

## INTEGRATION OF ARTIFICIAL INTELLIGENCE (AI) IN ENGLISH AS A SECOND LANGUAGE (ESL) LEARNING: FOR SUSTAINAINABLE DEVELOPMENT.

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### Abstract

There is a growing interest in and concern for the interference of Artificial Intelligence (AI) in the field of Applied Linguistics, which concerns itself with the study of language learning and teaching. As such, some scholars have raised interest to examine the impact of some computer innovative language apps like ChatGPT, Quillbot and others on learners of English as a second language (ESL); especially on the aspect of being a threat to eroding human input in language learning. While some see these technological language apps as threat to language learning, others see it as tools that enhance language learning. This descriptive research explored the impact of computer language applications on English as Second Language (ESL) learning. Krashen Input Hypothesis served as the basis that guided this research work. Secondary data from academic journals, articles and books were used to draw inferences and conclusion for this research paper.

**Keywords:** Artificial Intelligence, English as a Second Language, Input Hypothesis.

## CONSTRUCTION OF TRANSMUTED PROBABILITY MASS FUNCTION OF DISCRETE UNIFORM DISTRIBUTION ON A DEFINED INTERVAL [a,b]

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### Abstract

Considering that events occurring at unit intervals may decrease or increase over time, we seek to define a probability distribution function on [a,b] with respect to transmuted probability mass function of discrete uniform distribution property of the values. It is an improvement on well-known discrete distribution function.

**Keywords and Phrase:** Probability Mass Function, Uniform Distribution, Expectation, Discrete Random Variable.

## CYBERSECURITY GOVERNANCE AND RISK MANAGEMENT: A CASE STUDY OF NIGERIA'S FINTECH SECTOR

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### Abstract

The rapid growth of financial technology (fintech) in Nigeria has revolutionised the country's financial services landscape, offering innovative solutions to longstanding challenges in financial inclusion and accessibility. However, this digital transformation has also exposed the sector to unprecedented cybersecurity risks, necessitating robust governance and risk management frameworks. This paper presents a comprehensive case study of cybersecurity governance and risk management practices within Nigeria's burgeoning fintech sector. Using a mixed-methods approach, combining qualitative interviews with industry leaders, quantitative surveys of fintech companies, and analysis of regulatory documents, we examine the current state of cybersecurity preparedness, governance structures, and risk management strategies. Our findings reveal significant gaps in the existing regulatory framework, inconsistent implementation of cybersecurity best practices across the industry, and a critical shortage of skilled cybersecurity professionals. However, we also identify promising initiatives in public-private partnerships and self-regulation efforts by industry associations. Based on these insights, we propose a series of recommendations to strengthen the sector's resilience against cyber threats. These include enhancing the legal and regulatory framework, promoting the adoption of international cybersecurity standards, fostering collaboration between government agencies and fintech companies, and investing in cybersecurity education and training programs. This study contributes to the growing literature on cybersecurity in emerging fintech markets. It offers practical insights for policymakers, regulators, and fintech entrepreneurs seeking to balance innovation with security in the rapidly evolving digital finance landscape.

**Keywords:** Governance and Risk Management, cybersecurity, financial technology, PCI DSS, Cyberthreats, financial landscapes.

## EXPLORING THE IMPACT OF DIGITAL TRANSFORMATION ON SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs) IN ANAMBRA STATE

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### Abstract:

This study investigates the impact of digital transformation on Small and Medium-Sized Enterprises (SMEs) in developing economies, focusing on the challenges, opportunities, and policy implications for SME growth and development. A mixed-methods approach is employed, combining surveys of 300 SMEs with in-depth interviews of 10 business owners in selected developing economies. The findings reveal significant relationships between digital transformation, innovation, and SMEs' competitiveness, improves customer engagement, and increases access to new markets. However, infrastructure constraints, skills gaps, and regulatory barriers hinder digital adoption. This study identifies key drivers of digital transformation for SMEs, including cloud computing, big data analytics, and social media. It also highlights the importance of government support, infrastructure development, and workforce development, and workforce training in facilitating digital transformation. Policy recommendations are provided to address the challenges and leverage digital transformation for inclusive economic growth. These include investing in digital infrastructure, promoting digital literacy, and implementing policies that encourage innovation and entrepreneurship. This research contributes to understanding of digital transformation's impact on SMEs in developing economies, informing policymakers, practitioners and scholars.

**Keywords:** Digital transformation, SMEs, developing economies, innovation, policy implications.



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## ADDITIVE MANUFACTURING AS A LEARNING TOOL FOR ENGINEERING STUDENTS

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### Abstract

Additive Manufacturing (AM) is a valuable tool for engineering education because it allows for the fabrication of a wide variety of materials and offers beneficial characteristics such as on-demand engineering, batch manufacturing, design freedom, and little solid waste. However, existing educational programs do not analytically deliver the required skills and knowledge for the actual deployment of AM technologies, necessitating the development of new educational programs. The use of 3D printing for engineering students offers hands-on experience, design iteration, problem-solving, exposure to new technology, and teamwork. Fused Deposition Modelling (FDM), Selective Laser Sintering (SLS), PolyJet Printing, Stereolithography (SLA), and Direct Metal Laser Sintering (DMLS) are commonly used AM methods in engineering education. Overall, AM and 3DP is a valuable resource for engineering students to create models of their ideas and custom tools and fixtures that can be used in the lab or out in the field.

**Keywords:** Additive manufacturing, 3D printing, engineering education, learning tool.

## EFFECTS OF SPENT GRAIN ON LEAF AREA OF MAIZE (ZEA MAYS) ON SOIL IN IGBARIAM, ANAMBRA STATE OF NIGERIA.

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### ABSTRACT:

Maize (zea mays) is one of the world's leading cereal crop with about 604 million tons of production and also the most productive plant in terms of food nutrients per unit land area. The field study engaged the potential use of organic waste (spent grain) and inorganic fertilizer (NPK20:10:10) to improve the structure and water retention properties of Igbariam soil using a randomized complete block design (RCBD). A significant decrease in the soil bulk density and an increase in total porosity with water retention at different levels as well as the organic content of the soil are indications, that increment in organic matter due to addition of these waste can help to improve the soil physical, chemical and biological properties hence increase in yield.

**Keywords:** Maize, organic fertilizer, inorganic fertilizers, Bulky density.

## IMPROVING PRODUCTIVITY, PACKAGING AND WASTE REDUCTION THROUGH COOPERATIVE SOCIETY SUPPLY CHAIN IN ANAMBRA STATE, NIGERIA.

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### Abstract.

This study focuses on bringing to the knowledge of the general public and Anambra State government. The gains of using cooperative society as a platform. To improve productivity, packaging and reduction of wastage in Agricultural supply chain in Anambra State. This study would examine the resources and technology. Training and education of cooperative members. Workshop organized among cooperative members. The collective bargaining through cooperative society. Where this farmers and members, were giving bargaining power to purchase input in bulk. Enhancing packaging standardization and value processing. Improving productivity and reducing waste. This study carried out would make use of the information gathered to decompose the objective of the study. The researcher would based his findings from the studied three selected cooperative societies from three senatorial sections of the State. To make some recommendation and suggestions for further studies.

**KEY WORDS:** bargaining, resources, packaging, standardization, processing, wastage.

## Institutional Shareholding and Corporate Non-financial disclosures of Listed Manufacturing Companies in Nigeria

BY

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### ABSTRACT

The study presents empirical evidence on Institutional Shareholding and Corporate non-financial disclosures of listed Manufacturing companies in Nigeria using annual financial report data for the period 2012-2023. In order to determine the relationship between institutional shareholders and non-financial disclosures. The researcher used the ex-post facto research design. The target population comprised companies in the Industrial and consumer Sector listed on the Nigerian Stock Exchange. The study made use of secondary data extracted from annual reports of studied banks. The data were tested using skewness and kurtosis statistic and analyzed using unit root test, co-integration test, vector error correction model and Panel Least Square Regression analysis via E-Views to compute data from line and bottom-line items in financial statements. Content analysis was used to measure Effluent disclosures. Institutional Shareholding has a significantly impact on effluent disclosure of listed manufacturing companies in Nigeria.

**Key words:** Institutional Shareholding, Corporate Non-financial disclosures, Manufacturing companies.

## DEVELOPMENT OF AN AI-POWERED ROBOTIC SYSTEM FOR WASTE SORTING AND RECYCLING IN NIGERIA

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### Abstract

An AI-powered robotic system is a robot that utilizes Artificial Intelligence (AI) technologies to carry out tasks independently or with minimal human intervention. These systems rely on AI to analyze data from sensors, make decisions, learn from past experiences and adapt to changes in their environment, enabling them to perform complex functions autonomously. The increasing volume of waste generated globally coupled with the growing demand for efficient recycling systems has highlighted the limitations of traditional manual waste sorting methods. AI-powered robots offer a promising solution to enhance the efficiency, accuracy and scalability of waste sorting and recycling processes. These robots leverage advanced technologies such as computer vision, machine learning and robotics to identify, classify and sort waste materials in real-time by automating sorting tasks. AI systems can significantly reduce contamination in recycling streams, improve throughput and facilitate the recovery of valuable materials, contributing to a more sustainable waste management ecosystem. This paper explores the integration of AI in robotic waste sorting, focusing on key technologies such as deep learning-based object recognition, robotic arm design and reinforcement learning for process optimization. Additionally, it examines the challenges and opportunities in implementing AI-powered waste sorting solutions, including cost-effectiveness, scalability and the potential for human-robot collaboration. The study also considers the ethical and social implications of deploying AI robots in waste management systems. Ultimately, AI-powered waste sorting technologies offer the potential to revolutionize recycling practices, helping to transition toward a circular economy by increasing recycling rates and reducing the environmental impact of waste.

**Keywords:** AI, Computer vision, robotics, Machine Learning, deep learning, reinforcement learning



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## HYTOCHEMICAL SCREENING, PROXIMATE ANALYSIS AND ANTIMICROBIAL SCREENING OF ETHANOL EXTRACT OF BRYOPHYLLUM PINNATUM

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### Abstract

Phytochemical screening, proximate analysis and antimicrobial screening of ethanol leaf extract of *Bryophyllum pinnatum* traditionally used in various herbal medicine systems was assessed. Phytochemical screening using standard method revealed the presence of terpenoids, flavonoid, phenol and terphenoid. The proximate composition of *Bryophyllum pinnatum* using the standard method of AOAC showed that plant contain 1.21±0.7 ash, 72.92±1.08 carbohydrate 1.38±0.06 fat 6.02±1.06 fibre, 5.38±0.01 protein, 13.01±1.03 moisture. The extract was screened for their antibacterial activities against drug resistant bacteria: *Staphylococcus aureus* and *Escherichia coli* using the disc diffusion method and broth dilution method. The results indicated that the ethanolic extract of *Bryophyllum pinnatum* exhibited significant inhibitory effects on both *S. aureus* and *E. coli*, with zones of inhibition observed ranging between 11.42-17.70mm. This result supported the potential use of *Bryophyllum pinnatum* as a natural source of antimicrobial agents. Its effectiveness against both Gram-positive and Gram-negative bacteria highlights its broad-spectrum antimicrobial potential, which could be developed into alternative or adjunct therapeutic options for treating bacterial infections, particularly in light of increasing antibiotic resistance. The plant contain bioactive compound which could be of medicinal importance. The proximate analysis is an indication the plant leaves is a good source of human nutrition and should be included as a dietary supplement.

**Key words:** Phytochemicals, *Bryophyllum pinnatum*, terpenoids, anti-microcrobial, proximate analysis, and AOAC

## DEVELOPMENT OF AN INTELLIGENT DIAGNOSTIC SYSTEM FOR THE DETECTION OF SKIN DISEASES USING ARTIFICIAL INTELLIGENCE TECHNIQUE

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### Abstract

The worldwide occurrence of skin ailments emphasises the necessity for effective and precise diagnostic tools. In order to categorise skin disorders from clinical images, this study presents a unique automated skin disease detection system that integrates image processing approaches, with machine learning, especially a Convolutional Neural Network (CNN). Preprocessing techniques including noise reduction, colour correction, and segmentation are all part of the suggested approach, which aims to improve picture quality and guarantee precise feature extraction. The system collects important aspects, necessary for accurate illness classification, such as colour, texture, and shape, using a 2D Wavelet Transform algorithm and Structural Co-Occurrence Matrix (SCM). 1880 skin photographs from a variety of patient populations, including both healthy and sick skin disorders, were used to train and verify the system. With a multi-class classification accuracy of 87.9% and a binary classification accuracy of 98.3%, the CNN model demonstrated outstanding classification accuracy. The model's performance was further enhanced by adding patient data, and it was able to achieve an overall accuracy of 97.5% on unseen data.

**Keywords:** Skin Disease Detection; Image Processing; Convolutional Neural Network (CNN); Structural Co-Occurrence Matrix (SCM); 2D Wavelet Transform.

## IN-SERVICE TRAINING NEEDS OF HOME ECONOMICS TEACHERS IN HIGHER INSTITUTIONS IN ANAMBRA STATE

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### Abstract

This study sought to determine the in-service training needs of home economics teachers in higher institutions in Anambra State. Three research questions guided the study. The study adopted a descriptive survey design. The population of the study comprised 41 Home economics teachers from the higher institutions in Anambra state. The instrument used for data collection was a 21-item In-service training needs of home economics teachers questionnaire (ITNHTQ). Data collected were analyzed using mean scores and standard deviation, while t-test was used to test the three null hypotheses at 0.05 level of significance. The findings of the study showed that Home economics teachers in higher institutions in have high need for in-service training programmes which includes including workshops, seminars, had need of various ICT in-service training in the area of Microsoft word, excel spread sheet, preparation of slides, data analysis using computer software, coding of data and e-learning, and had need of in-service training in pedagogy skills for subject matter delivery. It was recommended among other things that the higher institutions in Anambra State should come up with different types of in-service training programmes to suit the demands of Home Economics teachers.

**Keywords:** In-service, Home economics, Teachers, Higher Institutions, Training, Needs.

## DESIGN AND IMPLEMENTATION OF A STANDALONE SOLAR STREETLIGHT WITH 30W CAPACITY, LITHIUM-ION BATTERY, AND PROXIMITY SENSOR FOR ENERGY-EFFICIENT LIGHTING.

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### Abstract

Given the increasing recognition of renewable energy as a cleaner option, there has been a persistent transition towards non-conventional energy sources, particularly solar energy. This is geared towards the reduction of GHG emissions, coupled with the high cost of power supply and energy transmission losses, especially in Nigeria. A popular application of solar energy is in the street lighting system, in which its usage is becoming widespread. In this project, we developed a stand-alone 30W streetlight unit with an intelligent feature for energy conservation. The solution was made to be a compact integrated unit that includes a solar panel, LED bulb, battery energy storage system (BESS), energy controller (EC), boost converter, and motion sensor. The proposed solution allows the EC to control the LED lamp illumination when it detects no presence. The results showed over 50% reduction in power consumption, improving the performance of the BESS and overall efficiency of the system.

**Keywords—** Solar Panel, BESS, Energy Efficient, Energy Controller.



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## CONSUMPTION PRACTICES OF LOCAL FOODS BY YOUNG FAMILIES IN AWKA NORTH LOCAL GOVERNMENT AREA OF ANAMBRA STATE

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### Abstract

This study focused on the consumption patterns of local foods by young family in Awka North local Government area Anambra state. To achieve the objectives, four specific objectives guided the study. Survey design was adopted for the study. The sample for the study was 55 young families. The instrument was face validated by three experts from Home and Economics. The data was analyzed using mean to answer the four research questions. Any item that is below 2.5 is regarded negative while values from 2.5 and above are positive. The study identified that most of these young families consume local foods in low quantity, while some of them does not consume local foods due to time constraints, nature of job and taste preferences. These study identified strategies in improving young families consumption of local foods which includes; organizing cooking classes for young mothers, organizing local foods festivals a medium of advertising and also establishing community gardens. . It was therefore recommended that this study should be a package for the government, teachers/educators, nutritionist to use enhance the consumption practices of local foods by young families through seminars in order to educate them on the benefits of these local foods and how to include them in their diets.

**Keywords: Consumption, Practices, Local Foods, Young Families and Njikoka LGA.**

## ENCOURAGING ADOPTION OF INNOVATIONS IN HOMESTEAD AGRICULTURAL PRODUCTION TO BOOST FOOD SECURITY AND INCOME GENERATION IN NIGERIA.

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### ABSTRACT

While a lot of attention is paid to the industrial sector for contributions towards food security and revenue from Gross domestic products (GDP), little attention is paid to the potentials of small- scale and homestead agricultural production towards contributing to food security and revenue generation. Homestead farming can be classified as small scale agricultural production. It is a farming enterprise practiced by a family around their home or accessible location. Homestead farming if encouraged can be adapted to go beyond producing for only the family needs to having surplus that can get to market to generate income for the family. The use of agricultural innovations can help improve their production and yields. The potential such an approach has is quite enormous. Not only can more employment be generated through such homestead farms, net agricultural production can be increased. Consequent price stability or reduction in cost of products, food security and revenue from export of products can be achieved. There is thus the need to enlighten the populace on the potentials of homestead farms, encourage more people start up such farms at the various capacities possible and create platforms that would enable the adoption of agricultural innovations by such farms to enhance agricultural production and yields.

**Keywords: Homestead, farms, food security, Agricultural production, innovations.**

## ASSESSMENT OF SELECTED SOIL NUTRIENTS IN ANAMBRA STATE POLYTECHNIC (ANSPOLY), MGBAKWU DEMONSTRATION FARM

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### Abstract

Plant well-being and the extent of crop yield is largely dependent upon the availability of macro and micro nutrients in soil. This study carried out assessment of selected macro and micro nutrients in the Anambra State Polytechnic, Mgbakwu demonstration farm. Soil samples were collected from three different portions in the Anambra State Polytechnic demonstration farm and were subjected to physicochemical analysis using Atomic Absorption Spectrophotometer. The results revealed that the soil samples contained appreciable amounts of nitrogen (4.032-4.76%), phosphorous(10.27-13.17mg/kg), magnesium(16.173-18.088ppm), calcium (21.083- 28.010ppm), zinc (3.012-4.432ppm), potassium (21.466-27.456ppm) and iron (3.896-5.189ppm). Meanwhile the soil samples were low in manganese (0.299-0.714mg/kg), boron (0.00-0.003ppm) and sulphur (1.467-2.167mg/kg). This study concludes that though, the samples contained reasonable amount of macro nutrients, calculated quantities of organic manure could be applied to boost manganese, boron and sulphur content of the soil for efficient yield.

**Keywords: Macro nutrients, Micro nutrients, Crop yields, Demonstration farm and plant well being**

## DESIGN AND IMPLEMENTATION OF A SYSTEM FOR PROCESSING STUDENTS IDENTITY CARD

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### Abstract

This project work focused on the design and implementation of a system for processing students ID-Card (i.e Identity Card). The study investigates the ID-Card processing expert system as a tool for revolutionized computer profession. It concentrates on how improved representations of processing knowledge and problem solving strategies have advanced the field of artificial intelligence in computer. The system generally involve mainly in manual process and it was discussed under the following process, when students visits the processing department for the purposes of ID-card. Their personal data are ended in the record and they will be asked to leave and came back in some days or weeks to collect their processed ID-card. The researcher investigates the manual system in detail with the view of finding out the need to automate it. Happily, the final result of the processing expert system was its ability to produce on the spot a wait and take processed ID-Card by processing the input data and provide summary of the ID-Card process for a particular student.

**Keywords: Identity card, Impersonation, Verification, Photography, Computerized**

## FOOD CONSUMPTION PATTERNS AND NUTRITIONAL STATUS OF MENOPAUSAL WOMEN IN NSUKKA LOCAL GOVERNMENT AREA, ENUGU STATE, NIGERIA.

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### Abstract

The study assessed the food consumption patterns and nutritional status of menopausal women in Nsukka Local Government Area, Enugu State, Nigeria. A cross-sectional survey design was employed, with 353 respondents selected using a multi-stage random sampling technique across six communities. Data on socio-demographics, dietary habits, and factors influencing nutritional status were collected using a structured and validated questionnaire. Anthropometric indices, including Body Mass Index (BMI) and Waist-Hip Ratio (WHR), were measured using standard methods. Data were analyzed using SPSS version 23, employing descriptive statistics and Chi-square tests, with significance set at  $p \leq 0.05$ . Results showed that most respondents (68.0% rural, 59.4% urban) were aged 59-55 years, and a majority were Christians (78.2% rural, 85.2% urban) and Igbos (94.6% rural, 95.3% urban). Educational attainment was low, particularly in rural areas (80.0% had no formal education), and most respondents were unemployed (59.1% rural, 40.6% urban) with monthly incomes below #30,000. Nutritional assessment revealed that 49.3% (rural) and 38.3% (urban) had normal BMI, while 61.3% (rural) and 60.2% (urban) were at high risk of abdominal obesity (WHR). Dietary patterns indicated irregular and nutritionally inadequate food choices, with high consumption of cassava (4-6 times weekly) and low intake of fruits, vegetables, and protein-rich foods. Meal skipping was prevalent 45.78% rural, 44.5% urban), and sedentary behavior was more common in urban areas.



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**PHYTOCHEMICAL SCREENING AND PROXIMATE ANALYSIS OF DRIED MUSA PARADISACA LEAVES GROWN IN MGBAKWU COMMUNITY OF ANAMBRA STATE NIGERIA.**

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**Abstract**

Every part of plantain is useful even though the dried leaves are normally regarded as waste and thought to be little or no significance and hence discarded. Fresh plantain leaves are consumed by animals and are also used for wrapping food like moi-moi, okpa and agidi in the south eastern part of Nigeria. This study investigates the qualitative and quantitative phytochemical and proximate composition of brown plantain leaves (*Musa paradisaca*.) to assess their potential medicinal properties. Qualitative analysis was performed using standard method to identify the presence of major bioactive compounds. The results revealed the presence of saponins, alkaloid, steroid flavonoids and tannins being the most prominent. Quantitative analysis was conducted to determine the concentration of specific bioactive compounds, with flavonoid content reaching up to 2.3 mg/g and tannin content at 3.1 mg/g. The proximate composition result for the leaves showed moisture 12%, ash 17%, 0.01% fiber, 0.35% moisture and 10.12% protein. The study highlights the diverse phytochemical profile of brown plantain leaves, justifying their traditional use in ethno medicine and suggesting their potential for further pharmacological studies. The result indicated that if the dried leaves are properly exploited and processed, they could be a high quality and cheap source of medicine.

**COMPARATIVE PROXIMATE COMPOSITION OF THE FRUIT JUICE OF JACK FRUIT (*Artocarpus heterophyllus*) AND SOURSOP (*Annona muricata*)**

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**Abstract**

Understanding the nutritional nuances of plants contributes valuable insights for dietary planning and underscores their potential in promoting health and well-being. Therefore, this research was designed to evaluate the nutritional properties of Jack fruit and Soursop juice comparatively. Samples were procured from Eke Oko Market, Orumba North Local Government Area of Anambra State, and analysed using methods endorsed by the Association of Official Analytical Chemists (AOAC). The nutritional composition of Jack fruit juice revealed percentages of 85.00% moisture, 0.50% fat, 0.75% crude protein, 0.89% ash, 0.43% crude fibre, 6.77% sugar and 5.66% carbohydrate. In contrast, the nutritional analysis of Soursop juice showed that it contained 87.90% moisture, 0.40% fat/lipids, 0.41% crude protein, 0.55% ash, 1.30% crude fibre, 6.70% sugar and 2.74% carbohydrate. This study underscores the high nutritional value of both jack fruit and soursop juice, confirming their potential as functional fruits. Soursop juice exhibited higher moisture content, whereas jack fruit demonstrated higher ash, fat, fibre, protein, carbohydrate and sugar contents. The comparative analysis provides valuable insights into the distinct nutritional profiles of these two important juice. It lays a foundation for further exploration into the medicinal and nutritional aspects of jack fruit and soursop juice, offering implications for both traditional and contemporary applications.

**Key words: Soursop, Proximate, Jack Fruit, Juice.**

**ENERGY CONSUMPTION OPTIMIZATION IN WIRELESS SENSOR NETWORK FOR ENVIRONMENT**

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**Abstract**

Wireless sensor network (WSN) has become increasingly common in several fields of human endeavors requiring information gathering and prediction in both military and civil operation. This work has presented modified energy efficient cluster based routing in wireless sensor network for environment monitoring. The scheme uses hierarchical routing protocol technique which is based on the fact that energy used for long transmission of message is very much greater than energy required for sending message over short range. A WSN was developed using MATLAB C code and with the proposed scheme simulations were carried out to analyze and investigate the effectiveness of the system in terms of optimum range of clusters required to optimize energy of WSN which revealed that the maximum number of cluster is 54. The variation of energy per round against the number of cluster shows that energy consumed per by each sensor node in the cluster is reduced as number of cluster is increased. This indicated that with the modified algorithm there is energy consumption optimization in WSN. **Key words: wireless sensor network, optimization of energy.**

**COMPARISON OF KNOWLEDGE, ATTITUDES, PRACTICES AND STRATEGIES TO ENCOURAGE BREASTFEEDING BETWEEN PRIMIPAROUS AND MULTIPAROUS MOTHERS IN ONDO WEST LOCAL GOVERNMENT AREA**

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**ABSTRACT**

The study investigated the comparison of knowledge, attitudes, practices and strategies to encourage exclusive breastfeeding between primiparous and multiparous mothers in Ondo West Local Government Area. A descriptive research design was adopted for the study. A self-structured questionnaire was the main research instrument used for the study. Four research questions were formulated and tested. Two hundred and fifty (250) participants were selected from Oka community in Ondo West Local Government Area of Ondo state. Simple random sampling technique was used to select respondents that constituted the sample for the study. Data collected was analyzed using descriptive statistics; frequency counts, percentage and mean score while t-test was used to test for the hypotheses. The responses to the questionnaire items were collated and analyzed using frequency counts, percentage, mean and standard deviation. The mean of the questionnaire items was used and interpreted based on the statistical real limits. A cut-off point (COP) was used to determine accepted or rejected items. Findings revealed that both primiparous and multiparous mothers have the knowledge of exclusive breastfeeding and the importance to both mothers and infants [3.04, 2.95]. They believed that exclusive breastfeeding protects infants against issues such as infections, childhood malnutrition and other post-natal diseases [3.17, 3.11]. Mothers find it difficult to breastfeed the baby exclusively for six months [3.32, 2.95]. Also, the result of the analysis revealed that the mothers' family background and economic status of the society influenced the adoption of exclusive breastfeeding. Breastfeeding barriers should be identified and solutions should be provided [3.63]. Therefore, the study recommended that nutrition awareness, conferences, workshops,, seminars should be set up in order to encourage exclusive breastfeeding among mothers and also to teach the importance of breast milk for the first six months of birth.

**Keywords: Breast Feeding, Primiparous, Multiparous, Malnutrition**



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## IMPROVING NETWORK LOAD BALANCING IN CELLULAR NETWORKS USING MACHINE LEARNING

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### Abstract

With the rapid expansion of cellular networks and the rising demand for high-speed data access, network congestion and load imbalance have become critical challenges in providing seamless connectivity. Traditional load balancing techniques are often insufficient to address dynamic and heterogeneous traffic patterns across cells, resulting in service degradation, increased latency, and reduced user satisfaction. This study proposes a machine learning-based approach to improve load balancing in cellular networks, enhancing resource allocation, and traffic prediction. The proposed system leverages advanced machine learning models, including time-series forecasting, to dynamically predict and manage traffic loads. By implementing deep learning methods like Long Short-Term Memory (LSTM) for traffic prediction, the system anticipates peak load periods, allowing pre-emptive allocation of network resources. Additionally, reinforcement learning techniques are employed to optimize handovers and resource distribution in real time, minimizing latency and ensuring balanced loads across cells. To validate the effectiveness of the approach, simulations are conducted using MATLAB, incorporating real-world cellular network data, and performance metrics such as latency, throughput, and packet drop rates are analysed. The results demonstrate that the machine learning-based approach significantly enhances load distribution, reduces handover occurrences, and improves network resilience under high traffic conditions.

**Keywords:** Load Balancing; Cellular Networks; Machine Learning; Long-Short Term Memory

## MOBILE INFORMATION SYSTEM FOR HOTELS, USING MESSAGE SWITCHING

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### Abstract:

This paper is concerned with development of a mobile information system for hotels using message switching. Insecurity and risk of requesting information from humans are the challenges travellers and Strangers in a new environment faced while searching for a hotel closed to their immediate location that suitably meets their standard; most time there is problem of getting the web-site of the client's desired hotel for reservation. The aim of the work is to develop a mobile information system that will be able to provide vital information through SMS on services, categories, classes and geo locations about hotels in Anambra State and to enable a user using a mobile device to have access to this information. The Object Oriented System Analysis and Design (OOAD) methodology were used for evaluation, analysis and design. VB.net is used to implement the front end, MySQL is used to implement the backend and Mcore is used to implement the SMS technology. The analysis and result shows that with the system, a user is capable of accessing necessary information through any mobile device, thereby overcomes the difficulties and risks encountered in finding these information about hotels that suites his standard within the state.

**Keywords - Mobile Information, Hotel, Message Switching, SMS.**

## SOCIAL ENTREPRENEURSHIP IN THE DIGITAL SKILL

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Social entrepreneurship is a model that seeks to address societal challenges through innovative, sustainable business practices that prioritize social impact alongside financial returns. The digital age has revolutionized the landscape of social entrepreneurship, empowering entrepreneurs to leverage technology to address pressing social

and environmental challenges. Digital platforms, social media, and mobile applications allow for rapid dissemination of information, easier collaboration, and broader customer outreach, which significantly aids in addressing issues like poverty, health, and education. Through case studies and analysis, we examine how digital platforms, social media, and emerging technologies (e.g., Block chain, AI) enable social entrepreneurs to: Scale impact through online engagement and mobilization, Access underserved markets and marginalized communities, Develop sustainable business models and revenue streams, Foster collaborative ecosystems and cross-sector partnerships, However, we also discuss the challenges faced by social entrepreneurs in the digital age, including: Navigating regulatory frameworks and digital governance, Ensuring digital inclusion and accessibility, Managing online reputation and social media risks, Balancing social mission with financial sustainability, Overall, this digital transformation has created a fertile environment for social entrepreneurs to leverage technology, forming new strategies to maximize societal benefits while driving change on a global scale. This research demonstrates that digital social entrepreneurship has the potential to transform societal outcomes, but requires a nuanced understanding of the complex interplay between technology, social impact, and sustainable business practices.

**Keywords:** social entrepreneurship, digital innovation, social impact, sustainability, technology for good.

## EXPERIMENTAL STUDY ON ADOPTING RENEWABLE ENERGY FOR SUSTAINABILITY IN RURAL PARTS OF ANAMBRA STATE: ISSUES AND PROSPECTS.

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### Abstract

The evolution of energy sector worldwide triggered intense preoccupation on finding alternative renewable energy sources and ensuring environmental sustainability. The renewable energy resources of the Nigerian state have not been fully tapped, resulting in the absolute use of its non-renewable energy sources such as coal, oil, and gas. The absence and epileptic electricity provision in Nigeria has severely hindered economic development especially in most remote areas in the nation. Secured energy supply is needed to support development in all sectors. This opinion paper reviews the state of the power industry in the country and the renewable energy resources potential of Anambra State and as well explores avenues of improving the efficiency of various energy systems, while minimizing their potential environmentally disruptive side effects. Considering the pattern of electricity generation and consumption over the last couple of decades, the paper proposes how the renewable sources like solar, biomass, wind should be integrated to electricity generation and used to improve power generation in the rural parts of the state.

**Keywords:** Sustainability, renewable energy, solar, biomass, wind.

## HOME AND SCHOOL PREDICTORS OF VALUE ORIENTATION AMONG SECONDARY SCHOOL STUDENTS IN AWKA NORTH LGA OF ANAMBRA STATE

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### Abstract:

This study examined the influence of home and school predictors on value orientation among secondary school students in Awka North LGA of Anambra State. A survey research design was employed, and data were collected from 300 participants comprising parents, teachers, and secondary school students. The Value Orientation Inventory (VOI), Home Environment Questionnaire (HEQ), and School Climate Scale (SCS) were used to collect data. Multiple regression analysis revealed that parental involvement ( $B = 0.25, p < 0.01$ ) and family structure ( $B = 0.18, p < 0.05$ ) were significant home predictors, while teacher support ( $B = 0.30, p < 0.01$ ) and school climate ( $B = 0.22, p < 0.05$ ) were significant school predictors of value orientation among adolescents. The findings highlight the importance of both home and school predictors in shaping value orientation among adolescents. The study recommends strategies for parents, teachers, and school administrators to promote positive value orientation among secondary school students.



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## AN OVERVIEW OF A GRID CONNECTED PHOTOVOLTAIC (PV) SYSTEM; AN ALTERNATIVE ENERGY USE IN NIGERIA

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### Abstract

As the world shifts towards renewable energy sources, solar power stands out as a popular choice for sustainable electricity generation. Among the various solar installations, grid connected photovoltaic (PV) systems are particularly beneficial for both homeowners and businesses. They harness sunlight through photovoltaic panels and connect to the utility grid, offering a reliable and efficient energy solution. A grid connected PV system is one where the photovoltaic panels or array are connected to the utility grid through a power inverter unit allowing them to operate in parallel with the electric utility grid. Nigeria's government has created several initiatives to increase the use of solar energy, including: Renewable Energy Master Plan (REMP): This plan aims to increase the share of renewable electricity to 36% by 2030. Solar Naija program: This program aims to install solar home systems for over 5 million homes. World Bank Loan for Solar Mini-Grids: This \$750 million loan will develop solar mini-grids in underserved areas of Nigeria. This article delves into the intricacies of grid connected PV systems, exploring their benefits, components, installation process, and their impact on energy consumption.

**Keywords:** Photovoltaic Panel, Battery, Inverter, Grid Connection, Net Metering, Net Billing

## STRUCTURAL CREDIT RISK MODELS WITH STOCHASTIC DEFAULT BARRIERS AND JUMP CLUSTERING USING HAWKES JUMP-DIFFUSION MODEL

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### Abstract

This research derives a closed-form expression for the default probability and the default correlation of firms under a structural model of credit risk. Specifically, the underlying firms are assumed to have the value process driven by a Hawkes jump diffusion model with the continuous parts of the trajectories being driven by correlated Brownian motions, while the jumps being driven by Hawkes processes having general structure of the exciting functions. The proposed framework takes into account the numerically observed facts about the default, i.e., clustering and unexpectedness. Furthermore, the default barriers are assumed to be stochastic in nature and modeled as stochastic processes, affected by common factors reflecting the systematic risk. A sensitivity analysis of default probability and correlation is conducted to investigate the impact of jump risk, clustering, and stochastic default barriers. These numerical studies demonstrate that jump clustering increases the default probability but reduces the correlation of defaults.

**Keywords:** Credit risk: Default clustering: Hawkes processes :Jump-diffusion processes: Stochastic default barriers.

## DIGITAL TECHNOLOGY PAYMENT SYSTEM, TECHNICAL AND VOCATIONAL EDUCATION TRAINING (TVET) ABU OMOGHOSA JAMES

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### Abstract

This paper carefully examines Digital Technology payment system, technical and vocational education training (TVET). Digital Technology plays a predominant role in enhancing Technical and vocation education training (TVET). Digital Technology means the use of Technology to enhance Technical and vocation education training (TVET), Digital Technology payment system seeks to catalyse, automate, enhance, aid and promote with ease the quick delivery of financial services as well as promoting the teaching and learning of Technical and vocation education training (TVET). Digital Technology is a concept that support Technical and vocation education training (TVET), it also aids businesses, companies in managing as well as promoting their financial products, processes, automation and

operations. Technical and vocation education training in Nigeria has perform better than how they were before the introduction of Digital Technology, Technical and vocation education training is now better and more efficient than before and financial products and financial services are now easily accessible, due to Digital Technology brought into the financial sector and this have led to a better performance in both educational and banking sector this has led to Sustainable Development in Nigeria. However, Digital Technology payment system, technical and vocational education training (TVET), should be encourage because it leads to Sustainable Development in Nigeria.

**Keywords:** Bank, Digital Technology, finance, payment, TVET

## COMPREHENDING SYNCHRONOUS CONDENSERS: THE FOUNDATION OF STABILITY IN POWER SYSTEMS

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### Abstract

This paper, comprehending synchronous Condenser; the foundation of stability in Power system explains the general background of a synchronous condenser. It defines synchronous condenser as a large rotating generator that's used to regulate voltage and improve stability in electrical networks. It's also known as a synchronous capacitor or synchronous compensator. It answered the question: what is synchronous condenser? This paper also listed features of the synchronous condenser, working principles, process of excitation and advantages, etc. Some of the advantages/application listed are: A synchronous condenser's voltage regulator controls the amount of reactive power it generates or absorbs to adjust the voltage of the electric power transmission grid; it can be used to improve power factor by drawing a leading current from the supply. Due to its ability in providing inertia, its spinning mass can help with frequency stability, especially in systems like wind and solar that experience frequent fluctuations. Synchronous condensers can be used to strengthen weak networks in remote areas. They're a conventional solution that's been used for decades to regulate reactive power. Result obtained shows that, due to their capacity to produce and absorb reactive power on demand, a Synchronous condensers' adaptability and efficiency make them indispensable instruments for guaranteeing stable and resilient power systems in the future as the world's energy environment changes.

**Keywords:** synchronous condenser, Synchro-Self-Shifting, HVDC, Excitation, Rotating inertia, Compensator

## LANDUSE PLANNING WITH DIGITAL MAPPING TECHNIQUES FOR SUSTAINABLE DEVELOPMENT: A CASE STUDY OF OKO AND ENVIRONS

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Landuse planning is crucial for sustainable development because it ensures that land resources are used optimally while taking into account environmental, economic, and social concerns. Digital mapping techniques have transformed land-use planning by offering precise spatial data and analytical tools. This project focuses on using digital mapping tools to plan landuse in Oko and its surroundings. The research uses Geographic Information Systems (GIS) and remote sensing to examine existing landuse patterns, estimate development restrictions, and offer options for sustainable land management. Innovation is critical to attaining sustainable development by solving global issues including poverty, inequality, climate change, and environmental degradation. Sustainable innovation entails creating technologies, processes, and systems that protect the environment, support economic growth, and improve social well-being. The methodology will include GIS and remote sensing data: High-resolution satellite imagery is used for landuse study. Ground truthing involves conducting field surveys to check satellite data and identify major landuse categories. The study demonstrates the effectiveness of digital mapping techniques in landuse planning. By combining geographical data and analytical techniques, it is feasible to detect difficulties, improve land use, and assure long-term growth. Adopting these solutions will solve current difficulties while also supporting long-term growth in Oko and its surrounding areas.

**Keywords:** Land use Planning, GIS and Remote Sensing, Sustainable Development and Digital



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## DEVELOPEMENT OF HIGH VOLTAGE POLYMER COPOSITE INSULATOR USING BANANA STEM FIBERS AND EGGSHELL ASH PARTICLES.

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### ABSTRACT

The transmission system consists of electric pole, electric wire and insulator separating the pole and the wire. Over the decades ago, ceramic materials have been solely used as high voltage transmission insulator. However, due to the shortcomings of ceramics materials such as high weight, difficulty in processing, poor mechanical strength, and high cost of production (firing energy), high voltage transmission insulators are being currently replaced with polymeric materials. On the other hand, polymeric insulators which overcome most challenges associated with ceramic insulators, have their own peculiar deficiencies but not limited to low mechanical strength, low operating temperature, loss its insulative and dielectric properties when exposed to outdoor applications for a long time.. Therefore, this work focused on the development of polymer composites insulator using Banana Stem Fibers (BSF) and CaCO<sub>3</sub>-derived Eggshell Particles (ESP) waste materials that are environmental friendly for high voltage transmission. This study was achieved using epoxy resin as the polymer matrix due its desired insulation, thermal and mechanical properties. The matrix was reinforced by BSF and CaCO<sub>3</sub> derived ESP, which is readily available being agro-waste and sustainable materials. The composites for the study was developed by easy and cost effective solvent-mixing method, which ensures thorough mixing of the composites constituents, cast and cured. The composite was subjected to morphological and micro structural characterization using Scanning Electron Microscopes (SEM).

Key words: Fibers, Composite, Insulator, Agro-waste, Sustainable. Mapping Techniques.

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Key words: Fibers, Composite, Insulator, Agro-waste, Sustainable.

## DIGITAL INNOVATIONS FOR SUSTAINABLE DEVELOPMENT IN THE TIME OF CRISIS

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This research aims to explore the relationship between digital innovations and sustainable development before and during the pandemic, taking into consideration the level of development of countries. The researcher employed both qualitative and quantitative methods, including a critical review of the literature and the analysis of a database of 36 states including FCT Abuja, using various indicators such as the global sustainability index, global innovation index, human capital and research, infrastructure, business sophistication, knowledge and technology outputs, State innovation performance, and creative output. The investigated State have been categorized into three clusters based on the level of sustainable development, and their characteristics before and during the pandemic have been examined. The study also explored the relationship between global sustainability and digital innovation. The results suggest that global action is needed to address structural factors perpetuating inequality and underdevelopment in less-developed States. Hence, this research offers insights into the potential of digital innovations in promoting sustainable development during crises. Policymakers, development practitioners, and scholars interested in sustainable development can benefit from this research to design more effective policies and interventions for different State clusters to understand the impact of the pandemic on sustainable development and develop more effective responses

**Keywords: Digital Innovations, Sustainable Development, Pandemic, Virtual Management,**

## NUTRIENT AND SENSORY PROPERTIES OF COOKIES MADE FROM YELLOW COCOYAM (Xanthosoma sagittifolium) AND WHITE CASSAVA (Manihot esculenta) FLOUR BLENDS ENRICHED WITH Moringa oleifera LEAVES

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### ABSTRACT

**Background:** Cookies are smallest treats commonly forced into shapes, consumed among all age groups in many countries. Cookies and pastries could be made from flours of local crops.  
**Objective:** To evaluate the proximate and sensory properties of cookies from composite flour blend of yellow cocoyam, white cassava enriched with Moringa oleifera leaves.

**Methods:** Baking ingredients used were purchased from Owerri main market, Imo State, moringa leaves were harvested from polytechnic farm. The cocoyam, cassava and moringa leaves were processed into flour and packed in air tight container before subjection to proximate, mineral, vitamin and sensory evaluation using standard methods. The cookies produced was enriched with moringa leaves using the standard procedure in the proportion of 100% cocoyam – A, 60:30:10 –B; 40:40:20 –C and 30:60:10-D percent of cocoyam, cassava and moringa leaf powder respectively.

**Result:** Moisture ranged from 9.15% to 12.03%. There was slight variation in protein content of the cookies. Fat content ranged from 5.08% to 9.02%. Fibre content of the samples were almost comparable (2.32 vs 2.00, 2.68 and 2.56). Carbohydrate content of the cookies were high (78.29% - 87.08%). Mineral content showed significant difference in calcium content. The cookies had significant magnesium content (17.80mg, 22.00mg and 19.44mg) than the control (13.62mg). Phosphorus content was against the control (43.26 vs 52.68mg, 56.27mg and 61.87mg) respectively. Vitamin C content of the cookies slightly varied. Sample A had the highest vitamin A content (0.50µ). Sensory attributes of the cookies showed that the colour score for the samples ranged from 6.15 to 8.10. Sample A and B had comparable score for flavor. Sample A had the highest score for texture (8.35). Samples A and B were more acceptable.

**Conclusion:** Moringa leaves can be used in enrichment of cookies and locally flour blend from staple tuber crops in production of cookies and pastries.

**Key word: Nutrient, Cookies, Flour, Enrichment, Moringa leaves.**



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