



Interdisciplinary National Conference on
**Governance, Security, &
Economic Development**

Rivers State University, Port Harcourt - Rivers State

Theme: Governance, Security,
and Economic Development:
Interdisciplinary Approaches for a Resilient Nigeria

ABSTRACTS & PROCEEDINGS

19th - 20th August, 2026





INTERDISCIPLINARY NATIONAL CONFERENCE ON GOVERNANCE, SECURITY, AND ECONOMIC DEVELOPMENT

THEME: Governance, Security, and Economic Development: Interdisciplinary Approaches for a Resilient Nigeria
DATE: Wednesday 19th - Thursday 20th August, 2026
TIME: 10:00am
VENUE: Rivers State University, Port Harcourt - Rivers State

OBJECTIVES: To bring together interdisciplinary scholars, practitioners, and policy makers to critically examine the nexus between governance, security, and economic development in Nigeria, and to promote innovative, evidence-based solutions that support national growth, peace, and sustainability.

CHIEF HOST:

Prof. Isaac Zeb-Obipi
Vice Chancellor,
Rivers State University, Nigeria

CONFERENCE LOC:

Assoc. Prof. Anthony Egobueze
Head, Department of Political Science,
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INTERDISCIPLINARY NATIONAL CONFERENCE ON GOVERNANCE, SECURITY, AND ECONOMIC DEVELOPMENT

CONFERENCE PROGRAMME

DAY ONE – Wednesday 19th August, 2026

Arrival of Guest/Conferees/Delegates

DAY TWO – Thursday 20th August, 2026

OPENING SESSION/AWARD/PLENARY

Conference Registration	- 9:00am – 10:00am
Opening Prayer/Welcoming Remark	- 10:00am – 10:15am
Institutional Brief/Chairman's Opening Remark	- 10:15am – 10:30am
Plenary Session	- 10:30am – 12noon
Launch Break/Group Photograph	- 12noon – 1:00pm
Plenary Session 2	- 1:00pm – 4:00pm
Policy Review Session	- 4:00pm – 5:00pm

DAY THREE – Friday 21st August, 2026

Departure of Guest/Conferee/Delegates



Welcome to

Rivers State University (RSU)

The Rivers State University (RSU) Port Harcourt was established in October, 1980 from the Rivers State College of Science and Technology which was itself established in 1972. It is located at Nkpolu-Oroworukwo in Port Harcourt, the capital of Rivers State, Nigeria.

Rivers State University is the first Technological University in Nigeria and the first state owned State University in the Niger Delta region of Nigeria. The motto of the University is “Excellence and Creativity”. The University has a staff strength of about 1,800 and a student population of over 28,000. The language of instruction in the institution is English.

The University has twelve faculties; Agriculture, Basic Medical Science, College of Medicine, Communication And Media Studies, Education, Engineering, Environmental Science, Humanities, Law, Management Science, Social Sciences, Science; and a Postgraduate School.

RSU has Six Institutes; Institute of Foundation Studies, Institute of Education, Pollution Studies, Education, RIART, Geosciences and Space Technology. It has four Centers: Centre for Continuing Education, Centre of Excellence in Marine and Offshore Engineering, Information and Communication Technology Centre, Entrepreneurship Development Centre

The University runs 37 programmes at the undergraduate level and 86 at the postgraduate level.

Rivers State University was established to:

- i. Produce scientific and technical manpower of various levels needed for essential development;
- ii. Produce technical and science teachers for developmental programmes;
- iii. Assist in the industrial and other developmental programmes through consultancy services, special project centres and related activities;
- iv. Encourage the advancement of learning to all persons without distinction or race, creed, sex or political conviction the opportunity of acquiring a higher and liberal education;
- v. Provide courses of instruction and other facilities for the pursuit of learning in all the faculties and institutes, and to make facilities available on proper terms of such persons as are equipped to benefit from them;
- vi. Encourage and promote scholarship and conduct research in all fields of learning and human endeavour;
- vii. Relate its activities to the social, cultural and economic needs of the people of Nigeria; and
- viii. Undertake any other activities appropriate for a university of the highest standard.

Source: <https://www.rsu.edu.ng/about-us/>

Welcome Address:

Interdisciplinary National Conference on Governance, Security, and Economic Development

By

Anthony Egobueze, PhD. FCPDM, FIIPRDDS, MAAPS, MNPSA

Associate Professor, Politics & Governance

Host, Conference Committee

Ag. Head, Department of Political Science

Rivers State University, Port Harcourt.

Distinguished scholars and researchers; policymakers and public officials; security experts and practitioners; representatives of civil society and the private sector; esteemed colleagues; students; members of the press; ladies and gentlemen.

It is my great pleasure and privilege, as Host and Chairman of the Conference Local Organising Committee, to warmly welcome you to Rivers State University and to this Interdisciplinary National Conference on Governance, Security, and Economic Development.

This conference comes at a defining moment in Nigeria's national development. The country continues to grapple with interconnected challenges of governance, insecurity, economic vulnerability, unemployment, poverty, institutional weaknesses, technological disruption, environmental pressures, and declining public confidence in institutions. These challenges do not exist in isolation; neither can they be adequately addressed from the perspective of a single academic discipline or institution. They demand collaboration, intellectual openness, empirical interrogation, and innovative policy thinking.

It is against this background that our theme, “Governance, Security, and Economic Development: Interdisciplinary Approaches for a Resilient Nigeria,” assumes particular significance. Governance provides the institutional framework within which society functions; security creates the stability necessary for human and economic activities to flourish; and sustainable economic development strengthens the capacity of citizens and institutions to withstand shocks. The three are therefore mutually reinforcing pillars of a resilient state.

Our purpose over these two days goes beyond presenting academic papers. We seek to create a vibrant intellectual and policy platform where scholars, practitioners, policymakers, and other stakeholders can interrogate Nigeria's contemporary realities, exchange evidence-based ideas, and propose practical pathways toward national renewal. The broad sub-themes—from politics, public policy, human security, and education to technology, climate change,

agriculture, international relations, leadership, and economic competitiveness—reflect our conviction that Nigeria's complex problems require multidimensional solutions.

I therefore encourage every participant to engage constructively and critically. Let our discussions move beyond merely identifying Nigeria's problems to developing workable alternatives. Let us ask not only what has gone wrong, but also what can be done, how it can be done, and who must take responsibility. The true value of this conference will ultimately be measured by the quality of knowledge generated and its capacity to influence governance, policy, institutions, and society.

On behalf of the Conference Committee, I sincerely appreciate our Chief Host, the Vice Chancellor of Rivers State University, Professor Isaac Zeb-Obipi, for his leadership and support. I also acknowledge members of the Conference Committee, our distinguished speakers, reviewers, authors, participants, partners, and everyone whose commitment has made this gathering possible.

To our guests who have travelled from within and outside Rivers State, I say: welcome to Rivers State University; welcome to Port Harcourt; and welcome to an important conversation about the future of Nigeria.

May these two days produce new knowledge, enduring collaborations, innovative policy ideas and practical solutions capable of strengthening governance, advancing security, promoting inclusive economic development and building the resilient Nigeria to which we all aspire.

Finally, let me use this medium to thank the Director of Policy, Research and Linkages of International Institute of Policy Research and Development Studies (IIPRDS) and his team for robust partnership. We are indeed grateful.

I wish you fruitful deliberations and a successful conference.

Thank you, and once again, welcome.



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Given this day 22nd February, 2019 at the University of Dar Es Salaam, Tanzania



Bassey Anam
Director - IIPRDS & UN-African IP-SDGs
University of Calabar-Nigeria



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Dated this day 5th November, 2019
University of Ghana, Accra

research for africa's development
research and capacity building accelerated economic development




Professor Ravindra Kumar
former Vice Chancellor
Ombudsman, Swarni Vivekanand,
Subharati University, Meerut, India.


Dr. Bassey Anam
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Conference Abstracts

Economic Development and Corruption in Governance in Nigerian: A Conceptual Framework for Solution

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Abstract

Today, Nigeria is still in the economic process to attain economic development. Nigeria is among the developing economies in the globe that corruption is fighting and depriving to have pace development and good governance. Corruption has become cankerworm in the Nigerian economy since the country became Republic in 1963. This study aims to examine the relationship between economic development and corruption in governance in Nigeria. The study proposes a conceptual framework to proffer solution to alleviate the effects of corruption in Nigeria. Secondary data and information are employed in this study and they are sourced from textbooks, articles journals, reports and internet, using conceptual and analytical methods. The paper discusses among others the concepts of economic development, concept and level of corruption in governance in Nigeria. The findings of the research reveal that there is negative relationship between the corruption and economic developments. Some of the recommendations suggested include the evolution of simple model to proffer solution to corruption in Nigeria as well as major challenges encountered by anti-graft agencies of Independent Corrupt Practices and other related offences Commission (ICPC) and Economic and Financial Crimes Commission (EFCC) in the country.

Keywords: *Anti-Graft Agencies; Conceptual Framework; Corruption; Economic Development; Governance; Nigeria*

Modeling and Forecasting of Hepatitis B Patients in Kaura Namoda Local Government Area Zamfara State

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Abstract

This paper titled "Modeling and Forecasting Hepatitis B Patients in Kaura Namoda Local Government Area, Zamfara State", aimed at developing an appropriate model for forecasting hepatitis patients in Kaura Namoda Local Government Area. The paper used secondary data to achieve its objectives. The secondary data was collected from records department of General Hospital Kaura Namoda from 2020 to 2025. The data was thus presented and analyzed using ARIMA, a time series model. The time plot of HBV shows that the series not stationary, the need for differencing, After the first differencing, it becomes stationary and ARIMA (2, 1, 1) model was found to be the best model since it has the least Akaike Information Criterion (AIC) with AIC 311.4042, HQC 308.4513 and SIC 310.6769 respectively. The forecast result of HBV shows that there will be a gradual increase in the occurrences of HBV especially in the months of October, November and December. Therefore, State Govt., Local Govt., and all the concern health agencies/workers at the General Hospital, Kaura Namoda should take a quick and cogent action in order to minimize the occurrence rate of HBV in the Area.

Keywords: *Modeling and Forecasting, Hepatitis B Patients, Kaura Namoda Local Government Area*

Democracy and Good Governance in Nigeria

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Abstract

This paper examines the relationship between democracy and good governance, with a focus on how democratic principles influence transparency, accountability, and citizen participation in public administration. The objectives are to analyze the theoretical and practical intersections of democracy and governance, evaluate case studies from diverse political systems, and identify factors that enhance or hinder governance quality in democratic settings. The paper adopts a qualitative methodology, utilizing comparative case study analysis and a review of relevant literature from political science and governance frameworks. Countries with varying degrees of democratic development were analyzed to assess governance outcomes in areas such as rule of law, public service delivery, and corruption control. Findings reveal that while democracy provides a foundational framework for good governance, its effectiveness depends significantly on institutional strength, civic engagement, and political will. Democratic regimes with weak institutions often struggle with governance challenges similar to non-democratic regimes. Conversely, mature democracies tend to exhibit higher levels of transparency, accountability, and inclusivity. The paper recommends strengthening democratic institutions, promoting civic education, and enforcing checks and balances to ensure that democratic processes translate into effective governance. Regional cooperation and international support can also play a pivotal role in promoting best practices.

Keywords: *Democracy, Good governance, Accountability, Political institutions, Civic participation*

Effective Utilization of Information Communication Technology (ICT) Facilities: Need Assessment for Teaching and Learning of Office Technology and Management (OTM) Education

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Abstract

The need for effective usage of ICT among OTM teachers and students as a means of teaching/learning cannot be overemphasized, most especially considering the modern approach of Office Work (Office Automation) which has overhauled the office work and therefore requires adequate ICT training. The aim of this research work is to assess the need for effective utilization of ICT facilities in teaching and learning of the OTM Education. The paper is a review content in which related literature were thoroughly evaluated. The study revealed that inadequate ICT facilities and electric power are the major factors that restrains the effective training of the OTM students. Part of the conclusion is that, adoption and effective utilization of ICT facilities in teaching and learning of OTM students will equip/improve students and teachers' performance. Among the recommendations is that, Provision of adequate power supply should be a priority; either by providing a standby generator or a solar system, because inadequate power supply is a great challenge to ICT requirements and in return affects effective teaching and learning of the OTM Education.

Keywords: *ICT, Teaching, Learning, OTM, Education*

Assessment of Psychometric Properties of the 2018/2019 GSE 221 English Language Examination Among NCE II Students of Aminu Kano College of Islamic and Legal Studies, Kano, Nigeria: Implication for Innovative Pedagogies for Sustainable Development

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Abstract

The study determined the psychometric properties of 2018/2019 GSE 221 English Language Examination among NCE II students of Aminu Kano College of Islamic and Legal Studies, Kano State Nigeria. The study was guided by seven objectives in line with five research questions and two hypotheses. The study employed survey research design. The population of the study was one thousand six hundred and thirty-eight (1638) and a total of five hundred subjects were used as sample size. Cluster and simple random sampling techniques were used to select the sample size using sampling procedure known as proportion. The scripts of students were used to collect responses of thirty objectives items performances (30) for the 2018/2019 GSE English Language Examination among NCE II Students of Aminu kano College of Islamic and legal studies. Findings revealed that the study revealed that 66.67% of the entire examination questions were difficult. Similarly, 33.33% were of average difficulty level of 2018/2019. The study further found 6.67% items discriminate well among high and low achievers. However, 93.33% of the items were not statistically significant in discriminating between high and low achievers. The study discovered that 9.17 % options of the items were not functional or effective in distracting students answers. All other options representing 90.83 % in the items were effective distractors because they have > than 5% value. The study unveil that the Content Validity index of 2018/2019 GSE 221 was rated high by the experts. The study discovered that the GSE 221 2018/2019 was reliable. The study finally recommended that items that were difficult should be modified and that similar studies should be conducted in other higher institutions of learning in the state.

Keywords: *Assessment, Psychometrics, Innovative and Pedagogies*

An Evaluation of Concurrency Control Techniques in Modern Database Management Systems

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Abstract

Concurrency control is a fundamental component of database management systems (DBMS), ensuring data consistency and isolation in multi-user environments where concurrent transactions compete for shared resources. With the increasing demand for high-performance, scalable, and distributed data systems, traditional concurrency control techniques face new challenges related to throughput, latency, and contention management. This paper presents a comprehensive evaluation of widely adopted concurrency control mechanisms in modern database management systems, including lock-based protocols, timestamp-based methods, optimistic concurrency control, and multi-version concurrency control (MVCC). The study examines their operational principles, performance characteristics, and suitability across different workload scenarios such as read-intensive, write-intensive, and mixed transaction environments. Key evaluation metrics including transaction throughput, response time, abort rate, and scalability are analyzed based on existing implementations and experimental findings reported in contemporary literature. The paper highlights the strengths and limitations of each approach and discusses their applicability in centralized, distributed, and cloud-based database architectures. The findings aim to provide database designers and practitioners with insights for selecting appropriate concurrency control strategies for modern DBMS deployments.

Keywords: *Concurrency Control; Database Management Systems; Transaction Processing; Lock-Based Protocols; Optimistic Concurrency Control; Timestamp Ordering; Multi-Version Concurrency Control; Performance Evaluation*

Influence of Creativity on Academic Achievement of Senior Secondary School Students' in Kazaure Education Zone, Jigawa State, Nigeria: The Need to Integrate Artificial Intelligence in Teaching and Learning

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Abstract

This research work investigated the influence of Creativity on Academic Achievement of Senior Secondary School Students in Kazaure Education zone of Jigawa state. The study has two objectives, one research question and one hypothesis. The study adopted an ex post facto research design. The population of the study consisted of all Senior Secondary School Students two (SSII) in kazaure education zone of Jigawa state, with a population of five thousand two hundred and fifty-three students (5253) from eight Senior Secondary Schools. A sample size of three hundred and fifty-seven (357) was selected using cluster and simple random sampling techniques in line with research advisers (2006) table for determining sample selection. Creativity scale (CS), was used as data collection instrument. Content and Construct Validity were employed to ascertain the validity of the instrument. The reliability Coefficient of the instrument namely, Creativity scale (CS) was 0.92, using Cronbach alpha technique. Data collected was analyzed using simple percentages for the research question and t- test independent sample for the hypothesis at 0.05 level of significance. The study revealed that the proportion of students with high creativity (50.70%) is slightly higher than the students with low creativity with forty-nine point three (49.3%). The present study also discovered that there was no significant difference in the mean scores of Academic Achievement of students with high and low proportions of creativity among senior secondary school students in Kazaure Education zone of Jigawa State. The study recommended that more teachers should be employed by the government; adequate and appropriate instructional materials should be provided that will help to ease and improve not only learning but also the development of creativity.

Keywords: *Creativity, Academic Performance and Artificial Intelligence*

Policy and Governance Framework for Sustainability Education

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Abstract

This study examines the policy and governance framework for sustainability education in private post-basic schools within Kano metropolis. Despite the existence of national instruments such as the Climate Change Act (2021) and state-level regulatory mechanisms, implementation remains fragmented. Employing a descriptive survey design, data were collected from 200 administrators, teachers, and policymakers using a structured questionnaire and analyzed with descriptive and inferential statistics. Findings reveal moderate integration of Education for Sustainable Development (ESD) policies into school curricula, but weak classroom implementation due to inadequate teacher training and limited professional development. Internal governance structures, particularly school leadership, emerged as the strongest predictor of ESD implementation ($\beta = 0.42$, $p < 0.01$), whereas external oversight mechanisms such as inspections were weak and underutilized. Additional barriers include insufficient resources, poor infrastructure, and limited partnerships with NGOs and industry stakeholders. The study concludes that misalignments between policy frameworks, governance structures, and school-level practices hinder effective sustainability education. It recommends enhancing teacher capacity, embedding ESD-specific standards in governance frameworks, strengthening partnerships, and instituting robust monitoring systems to ensure accountability and meaningful integration of sustainability education.

Keywords: *Policy Framework; Governance; Education for Sustainable Development (ESD); Sustainability Education*

Effect of Selected Macroeconomic Variables On Stock Market Prices in Nigeria

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Abstract

This research examined the effect of selected macroeconomic variables on stock market prices in Nigeria. The specific objectives of the study were to examine effect of exchange rate, GDP growth rate, inflation rate, interest rate and money supply on stock market prices in Nigeria. The research design is ex post fact. Data are in time series and were collected from CBN statistical bulletin for the period 1985 to 2024. Unit root test was carried out and it was found that all the variables were stationary at mixed order. ARDL bound test was applied to examine the long-run movement of the variables. It was found that the variables were co-integrated. The study found out that exchange rate, GDP growth rate, inflation rate, interest rate and money supply individually had insignificant effects on stock market prices in the short-run. However, in the long-run, broad money supply, inflation rate and exchange rate had positive effects on stock market prices while interest rate and GDP growth rate had negative effects on stock market prices in Nigeria. The study therefore recommended that the Central Bank of Nigeria (CBN) should adopt a balanced expansionary monetary policy that ensures adequate liquidity in the financial system without triggering excessive inflation. Given that interest rate changes have a weak and negative effect on stock prices, policymakers should focus on lowering the cost of borrowing to encourage private sector investment and participation in equity markets, Also, the CBN should maintain moderate and predictable inflation through price stability measures ideally within the range of 6–9 percent, strengthen real-sector linkages with the financial market and minimize exchange rate volatility through consistent policy measures, improved export earnings, and a diversified foreign exchange base.

Keywords: *Exchange rate, GDP, Growth rate, Inflation rate, Interest rate and Money supply*

A Layout-Aware Super-Resolution Framework for Robust License Plate Recognition in Sub-Saharan Surveillance Scenarios

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Abstract

Automatic License Plate Recognition (ALPR) systems are critical for modern traffic management and forensic security. However, their performance in real-world Sub-Saharan scenarios particularly in Nigeria is frequently compromised by sub-optimal imaging conditions, including motion blur, sensor noise, and low resolution from legacy CCTV infrastructure. While recent advancements in Deep Learning have introduced Image Super-Resolution (SR) as a pre-processing solution, most existing models are trained on synthetic datasets that fail to replicate the complex degradation of real-world surveillance. Building on the foundational work of Nascimento et al. (2025), this paper presents a novel Layout-Aware Super-Resolution Framework specifically optimized for Nigerian vehicular identification. The proposed framework integrates a specialized Layout-Aware and Character-Driven Network (LCDNet) architecture designed to preserve the structural integrity of unique Nigerian alphanumeric fonts and state-specific plate slogans. Methodologically, the study establishes a new benchmark dataset comprising paired low-resolution and high-resolution Nigerian license plate images captured under diverse environmental conditions. Preliminary results indicate that the integration of this SR framework enhances the Peak Signal-to-Noise Ratio (PSNR) of degraded images by approximately 4.2dB and boosts subsequent recognition accuracy by 28.5% compared to standard interpolation methods. This research provides a scalable, software-based solution for upgrading the reliability of existing security infrastructure in developing regions without requiring expensive hardware overhauls.

Keywords: *Super-Resolution, Deep Learning, Nigerian License Plates, Vehicle Identification, Real-World Scenarios, LCDNet.*

The Role of CCTV and Smart Security Systems in Enhancing Sustainable Development in Nigerian Colleges of Education

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Abstract

This study investigates the role of CCTV and smart security systems in enhancing sustainable development in Nigerian Colleges of Education. In recent years, increasing incidents of theft, vandalism, and insecurity on campuses have disrupted teaching, learning, and administrative processes, threatening the overall development of educational institutions. To address these challenges, many colleges have adopted technological solutions such as CCTV surveillance and smart security systems, which provide real-time monitoring, prompt response to security incidents, and data for decision-making. The study adopts a quantitative research approach using a survey research design. Primary data will be collected through structured questionnaires administered to students, lecturers, and security personnel in selected Colleges of Education across Nigeria. Descriptive statistics, including mean and standard deviation, will be used to summarize respondents' perceptions, while inferential statistics, particularly multiple regression analysis and Pearson correlation, will be employed to test the formulated hypotheses and examine the impact of security technologies on sustainable development. Findings will be revealed that CCTV and smart security systems have a significant positive effect on campus safety, resource protection, and sustainable institutional development. The study will be identifying challenges hindering effective implementation, including inadequate funding, poor technical infrastructure, low technical capacity, and limited policy support. The study concludes that while CCTV and smart security technologies are vital tools for promoting sustainable development in Nigerian Colleges of Education, their effectiveness depends on adequate funding, proper training, robust infrastructure, and clear institutional policies. It will be recommended that educational administrators invest in modern security technologies, provide technical training for personnel, and develop policies to ensure effective monitoring and sustainability of campus security systems.

Keywords: *CCTV, Smart Security Systems, Sustainable Development, Colleges of Education, Campus Safety, Nigeria*

Prospect and Challenges in the Provision of Social Services Posed by Displacement to Urban Governance in Maiduguri, Metropolis

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Abstract

Displacements have created serious setback to efficient urban governance in term of proving provisional social services to the citizens by the government in particular the den of insurgency in Maiduguri Metropolis. The study assesses the prospect and challenges in the provision of social services posed by displacement to urban governance in Maiduguri Metropolis. Specifically, the study examines the emerging challenges with Internally Displaced Persons (IDPs) influx on urban governance in Maiduguri Metropolis, and examines the challenges faced by IDPs in the provision of social services in Maiduguri Metropolis. A mixed method combining qualitative and quantitative data collection techniques was employed for this study. The study gathered data from 315 respondents using stratified, proportionate, and purposive sampling techniques. Questionnaire and structured interviews were used to obtain data from respondents. The study reveals that influx of IDPs in host communities has resulted to population explosion, thereby over stretching the limited resources available to government and non-governmental organizations towards the provision of livelihood support. The study also finds that the major challenges faced by the IDPs are inadequate provision of education, healthcare and shelter services as well as mistrust and social Conflict. The study concludes that displacement crises have led to disruption in essential life support systems, worsened underdevelopment, and continued decline in already fragmented and fragile security structures. It recommends that government and other stakeholders should intensify efforts, and collaboration with other local and foreign NGOs to ensure that Internally Displaced Persons were not relegated to background when it comes to communities' provision of social services.

Keywords: *Social Services, Displacement, Urban Governance, Challenges, IDPs*

Integrating Biosensor Devices and Edge AI for Monitoring Farmer Vital Signs During Fieldwork

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Abstract

This study presents the design and implementation of an intelligent health monitoring system that integrates wearable biosensor devices with Edge Artificial Intelligence (Edge AI) to monitor farmers' vital signs during fieldwork. Agricultural labor often exposes farmers to harsh environmental conditions such as extreme heat, dehydration, and physical exhaustion, which can lead to serious health risks if not detected early. To address this challenge, the proposed system utilizes wearable biosensors to continuously capture physiological parameters including heart rate, body temperature, blood oxygen levels, and physical activity. The collected data are processed locally using Edge AI algorithms embedded in low-power computing devices, enabling real-time analysis and anomaly detection without reliance on continuous internet connectivity. This approach ensures low latency, improved privacy, and reliable operation in rural and remote farming environments. The system is designed to detect early signs of fatigue, heat stress, and abnormal physiological conditions, and to provide immediate alerts to the farmer or relevant stakeholders through mobile or embedded notification systems. Furthermore, the study explores the integration of environmental data with physiological signals to enhance context-aware decision-making. A prototype model is developed and evaluated based on performance metrics such as accuracy, responsiveness, and energy efficiency. The results demonstrate the effectiveness of the system in improving farmer safety and reducing health-related risks during agricultural activities. This research contributes to the advancement of smart agriculture by introducing a human-centered monitoring framework that leverages biosensing and edge intelligence to promote safer and more sustainable farming practices.

Keywords: *Wearable Biosensor; Edge Artificial Intelligence; Farmers; Vital Signs; Smart Agriculture*

Language Education as a Driver of Human Capital Formation and Sustainable Social Development

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Abstract

Language education plays a vital role in shaping human capital and encouraging sustainable social development in an increasingly interconnected world. This paper examines how language education contributes to the development of individuals' communicative competence, cognitive abilities, and intercultural skills, which are essential components of human capital. Drawing on human capital theory and communicative language teaching perspectives, the paper explores the ways in which proficiency in one or more languages promotes employability, facilitates social integration, and encourages active participation in local and global economies. Making use of a qualitative, desk-based approach, the study explores relevant literature, policy frameworks, and empirical studies on language education and development. It brings out the transformative potential of language education in improving access to information, strengthening social cohesion, and reducing inequalities, particularly in multilingual and developing contexts such as Nigeria. The study also looks into key challenges which includes inadequate instructional resources, limited exposure to authentic language use, and gaps in pedagogical practices, which can affect the effective human capital formation. This paper also finds that quality language education is a key factor that contributes to the development of skilled, adaptable, and globally competitive individuals, thereby serving as a foundation for sustainable social progress. The study concludes that integrating effective, learner-centered approaches—such as task-based language instruction—can enhance the impact of language education on human capital development. It recommends more investment in language education, curriculum innovation, and teacher training to ensure that learners acquire the competencies necessary for long-term social and economic sustainability.

Keywords: *Language Education, Driver of Human Capital Formation, Sustainable Social Development*

Exploring the Role of Libraries in Educational Transformation Through the Application of Technology: Implications for Policymakers

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Abstract

This study investigates the pivotal roles of public libraries in the transformation of education, with a specific focus on the integration of technology and its implication for policymakers. The primary purpose is to clarify the evolving importance of libraries as dynamic hubs for learning and to assess how technological advancements contribute to educational innovation. A qualitative method was employed involving the administration of open-ended questionnaires to professional librarians with a minimum of master's degree from six selected public libraries in the six-geo political zones in Southwest Nigeria. The findings of this study revealed that technology-enhanced libraries play a crucial role in facilitating personalized learning, fostering information literacy, and bridging the digital divide. Another finding revealed that technology is a catalyst for improved access to resources. The digitization of materials, online databases, and electronic resources contribute to a more extensive and easily accessible collection, enhancing the overall quality of library services and enriching the user experience. The recommendations underscore the necessity for robust policies supporting the integration of technology in libraries, advocating for professional development opportunities for educators and librarians, and establishing collaborative frameworks to fully exploit libraries as drivers for educational transformation in the digital era.

Keywords: *Educational transformation, Libraries, Technology, Policymaker*

Cashless Banking: Benefits and Challenges for Small Scale Businesses in North West Nigeria

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Abstract

The cashless policy introduced in 2011 by the Central Bank of Nigeria generated a lot of discuss within the financial sector. While the policy may succeed in southern Nigeria, there is the need to look at the peculiarity of North Western Economy and its insurgency/security challenges. This study is a survey research and convenience sampling method were used in distributing questionnaires to respondents within the seven states that make up the zone which served as the population of the study. Findings showed that cashless banking will reduce armed robbery attack on businesses and also enhance the security of funds. Entrepreneurs and Businessmen and women in North Western Nigeria are not ready for the new policy. The study recommends that Emirs and District Heads should play a fundamental role in making awareness about the benefits of the policy to their community. The banks should enhance their telecommunication system to guaranty efficiency.

Keywords: *Cashless Banking, Corruption, Small Business, Entrepreneur*

Community Policing as a Strategy for Sustainable Peacebuilding in Southwest Nigeria

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Abstract

This paper holistically reviews the interplay between community policing and peacebuilding in Southwest Nigeria, emphasizing the role of inclusive security approaches in combatting crime and fostering social cohesion. The primary objective is to evaluate how community-based policing strategies contribute to sustainable peace, citizen trust, and effective conflict management within local communities. Drawing on both qualitative and secondary data, the methodology involves a content analysis of policy documents, reports from security agencies, and scholarly literature, complemented by interviews with selected community leaders and law enforcement officers. Findings reveal that while community policing initiatives have aided intelligence gathering and citizen participation in security affairs, their impact remains impeded by inadequate training, resource limitations, and weak institutional trust. The paper argues for a redefinition of community policing as an encompassing peacebuilding tool rather than a reactive crime-control mechanism. The paper recommends enhanced police-community synergy, continuous capacity building programs for security personnel, and institutional reforms that promote accountability and local ownership of security processes. Furthermore, it advocates for integrating traditional conflict resolution mechanisms into formal policing frameworks to strengthen peace infrastructures. Ultimately, the paper underscores that sustainable peace in Southwest Nigeria requires a holistic approach that harmonizes state authority with community agency.

Keywords: *Community policing, Peacebuilding, Southwest Nigeria, Security governance, Social cohesion*

Effect of Computer Assisted Instruction (CAI) on Student's Performance in Government Science Technical Colleges in Gombe State

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Abstract

The integration of technology in education has become essential for improving students' learning outcomes, particularly in science and technical subjects. This study investigated the effect of Computer-Assisted Instruction (CAI) on students' academic performance in Government Science Technical Colleges in Gombe State, Nigeria. Specifically, the study examined the influence of CAI on academic performance, interest, engagement, retention, and understanding of subject content, as well as the challenges hindering its effective implementation. A total of 179 students were purposively and proportionately sampled from three technical colleges—GSTC Tula, GSTC Kwami, and GSTC Barunde. Data were collected using a Science and Technical Achievement Test (STAT) and structured questionnaires and analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (t-test). The findings revealed that students taught using CAI performed significantly better than those taught with traditional methods (Grand Mean = 3.89), with higher levels of engagement (Mean = 4.19), interest (Mean = 4.16), and retention (Mean = 4.17). However, challenges such as inadequate computers, poor electricity supply, insufficient teacher training, and limited funding were found to hinder effective CAI implementation. The study concludes that CAI is a powerful instructional strategy that enhances academic performance, motivation, and understanding in technical education when supported by adequate resources and teacher competence. It recommends increased funding for ICT infrastructure, teacher training, and integration of CAI in the curriculum to improve student learning outcomes.

Keywords: *Computer, Assisted, Technology, Instruction, Technical, Performance*

Mathematical Modelling of Kidnapping Activities

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Abstract

Kidnapping remains one of the most alarming security challenges in Nigeria, particularly in the northern regions, where it has escalated into a profitable criminal industry. In this study, a mathematical model was developed to analyze the dynamics and control of kidnapping activities. The population is divided into five compartments: Susceptible individuals (S), Exposed individuals (E), Informants (I), Kidnappers (K), and Repentant kidnappers (R). The model captures the transition of individuals from being vulnerable to becoming informants, kidnappers, or repents from the activity. A basic reproduction number R_0 is derived to assess the potential spread or decline of kidnapping. A value of R_0 less than one indicates that kidnapping activities can be eliminated from the population, while a value greater than one signifies persistence. Numerical simulations demonstrate that increasing the rate of rehabilitation of kidnappers leads to their repentantt, also, strengthening intelligence through informants, and reducing recruitment into kidnapping can significantly curb the growth of this criminal activity. The model offers strategic insight into policy development aimed at reducing kidnapping in Nigeria.

Keywords: *Mathematical modelling, Kidnapping, Informants and repentant kidnappers*

The Thermal Performance of Maiganga Coal By-Product as a Partial Replacement for Cement in Sustainable Building Applications

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Abstract

In civil engineering, it is common to use coal by-products, particularly fly ash, as a partial substitute for cement. Maiganga is a city situated in northeastern Nigeria. It is located in Akko Local Government Area region of Gombe State. It's best known for coal mine, one of Nigeria's significant coal deposits. Exploration of alternative supplementary cementitious materials (SCMs) has been triggered by the growing demand for sustainable construction materials. The purpose of this study is to examine the thermal performance of Maiganga extracted coal by-product as a partial substitute for Ordinary Portland Cement (OPC) in concrete production. The thermal processing of Maiganga coal by-product, which is a low-rank sub-bituminous coal found in Gombe State, Nigeria, produced ashes that were then incorporated into cement at different replacement levels (0%, 10%, 20%, and 30%). The thermal properties, including heat of hydration, thermal conductivity, and high-temperature resistance. The findings show that, coal ash has a significant impact on reducing heat evolution, improving thermal insulation, and enhancing fire resistance of concrete. However, the early compressive strength was diminished by higher replacement levels. The study suggests that Maiganga coal ash can be a viable and sustainable substitute for partial cement replacement, especially in hot climates and mass concrete applications.

Keywords: *Maiganga coal, Fly ash, Pozzolan material, Sustainable construction, Green building materials, Low-carbon concrete*

Evaluation of Science Process Skills in West African Examination Council Biology Practical Examinations in Nigeria for Sustainable National Development

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Abstract

This study analyzed the science process skills in senior secondary school examination (WAEC) in Nigeria for the periods of 10 years (1998-2007). Ex-post facto design was adopted for the study. The 5 prominent science process skills identified out of the 15 used in the study are manipulating (17.20%), calculating (14.20%), recording (13.60%), observing (12.00%) and communicating (11.40%). The results also showed high percentage rate of basic (lower order) science process skills (62.80%) as compared to the integrated (higher order) science process skills (37.20%). The results also indicated that the number of basic process skills is significantly higher than the integrated process skills in the senior secondary school certificate Biology practical examinations in Nigeria. It is recommended that the examination bodies in Nigeria should include more integrated science process skills into the senior secondary school Biology practical examinations so as to enable the students to be prone to creativity, problem solving, reflective thinking, originality and invention which are vital ingredients for science and technological development of any nation.

Keywords: *Science Process Skills, West African Examination Council, Biology Practical Examinations, Sustainable National Development*

Insecurity Threats to Sustainable Economic Development and Democratic Ideals Zamfara North of Zamfara State

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Abstract

The research study titled: insecurity threats to sustainable development and democratic ideals Zamfara North of Zamfara State. The research is a survey research with the following objectives; to look into the insecurity threats that work against sustainable economic development and democratic ideals, to examine the various mechanism put in place to arrest the issues of insecurity in Zamfara North, Zamfara State. The target population under study is 2,606. Hence, 10% (261) of the population was taken as sample size. The instrument use for data collection is questionnaire which contain fifteen set of close ended questions administered. Therefore, 261 questionnaires were distributed to the case study but only 180 were filled and returned. Chi-square was used as a statistical tools for testing the stated hypothesis, the research found out that the issues of insecurity in Zamfara Sate are affecting the sustainable economic development of the state, and that some mechanism are put in place to tackle the issues of insecurity in the state. It was recommended that the real panacea for solving insecurity challenge in Zamfara and Nigeria at large is for government to accelerate the pace of development. Development in this context consists of creating an economy with relevant socio, economic and physical infrastructure for business operations and industrial growth, to provide gainful employment, high level of educational facilities, and medical care for the people.

Keywords: *Insecurity, Threat, Economic, Development*

Investigating Effect of Closing Valve Laws on Transient Flow of Gas in Producing and Injection Gas Well

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Abstract

Investigating effect of Closing Valve Laws on Transient Flow of Gas in producing and Injection Gas well is a method in determining effectiveness of a producing gas well when injection of fluid is on process. The process is usually done separately but when the pressure is slow in pushing the gas to the well head, injecting fluid is applied to add up to the strength of the pressure. Understanding the effect of the closing laws will enable one to analyse the relationship between pressure waves with respect to different modes of closing and opening of valves. In producing gas well, four types of laws applicable to closing valve, namely, instantaneous, linear, concave, and convex laws, are considered. These closure laws describe the speed variation of the transient flow as the valve closes. The numerical solution is obtained using the finite scheme method which has been proved to be unconditionally stable. The results show that changes in the pressure wave profile and amplitude depend on the type of closing laws, valve closure times, and the number of polygonal segments in the closing function. The pressure wave profile varies from square to triangular and trapezoidal shape depending on the type of closing laws, while the amplitude of pressure waves reduces as the closing time is reduced and the numbers of polygonal segments are increased. The instantaneous and convex closing laws give rise to minimum and maximum pressure, respectively.

Keywords: *Closing Valves Laws, Producing and Injection Gas well Finite Scheme Method and Pressure wave*

Impact of Corporate Governance on the Financial Performance of Primary Co-Operative Societies, in Kaduna State, Nigeria

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Abstract

This study will examine the Impact of Corporate Governance on the Financial Performance of Primary Co-operative Societies, in Kaduna State, Nigeria. Corporate governance play a significant role in managing financial performance of primary co-operative societies. The study will rely on descriptive statistics in the form of mean, median, maximum value minimum values will be use. Panel data techniques in the form of Pooled Ordinary Least Squares (POLS), Fixed Effects and Random Effects models will be use to examine the independent variables on the dependent variables; Cronbach's Alpha will be use to test the hypotheses. The population will consist of all the member of primary cooperatives societies in the study areas; the researcher will use multi – stage sampling techniques. The total population of members will be 4200 (source: Department of Co-operatives Kaduna State) to determine the sample size. STaro Yamani sample size formulae will be use to determine the sample size. Questionnaires will be design by the researcher to distribute to members of the co-operative societies to guide the researcher for their responses. The broad objective of the study will be to examine the Impact of Corporate Governance on the Financial Performances of Primary Co-operative Societies Business. The specific objectives of this study will be to: Examine the impact of corporate governance on financial performance of primary co-operative business, determine the extent to which members are involved in cash management to improve financial performance on savings and reserve of Primary Co-operative Societies business., ascertain the modalities in ensuring effective corporate governance to improve financial performance of assets management of primary co-operative society's business, valuate the factors that militate against corporate governance on the financial performances of debt and credit facilities of Primary Co-operative Societies,. The questionnaires will develop by the researcher based on Likert 5-point scale will be use for the study data will be collect from secondary and primary sources. The researcher will develop objective for the study base on the research questions design. The major findings will show how corporate governance on account receivables management will be significant positive impact on the financial performance and account payables management will have significant and positive impact on the financial performance proxies by return on equity. The findings will also show the significant impact on cooperative activities that members actively participate in the financial performance of their cooperative activities and more findings will emerge which will held on how the primary co-operative will be best in managing financial performance of co-operative societies in Kaduna State. The study will come with recommendations that will guide the members, council of inspectors, board of directors and the management committee to have better information on corporate governance and how it will guide them for effective financial performance of primary co-operative societies in Kaduna State and Nigeria at large.

Keywords: *Financial Performance, Corporate Governance, and Primary Co-operatives*

Design, Development and Validation of an AI-Based Troubleshooting Platform for Electrical Machines Instructions in the Resource-Constrained and Insecure Learning Environment in the Technical Institutions in North-East Nigeria

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Abstract

The rapid expansion of artificial intelligence (AI) applications in technical education has highlighted both opportunities and challenges in effectively teaching troubleshooting skills for electrical machines—particularly in resource-constrained and insecure learning environments. Traditional instructional methods often rely on physical equipment, expert supervision, and stable infrastructure, which are frequently unavailable in under-resourced settings. This study proposes the design and validation of an AI-based troubleshooting platform that leverages machine learning, expert-system logic, and adaptive instructional models to simulate real-world electrical machine faults and guide learners through diagnosis and resolution. The platform dynamically adapts to learner performance, offers contextualized hints, and provides real-time feedback through an intuitive interface optimized for low-bandwidth environments. To validate educational effectiveness, a mixed-methods research design was used, incorporating controlled classroom trials, usability assessments, and performance analytics. Results indicate that learners using the AI-based system show statistically significant improvements in diagnostic accuracy, procedural understanding, and self-efficacy compared to those instructed by conventional methods. This work contributes a validated AI instructional framework that is scalable, adaptable to constrained conditions, and supportive of increased access to quality technical education.

Keywords: *Design, Development and Validation, AI-Based Troubleshooting Platform, Electrical Machines, Resource-Constrained, Insecure Learning Environment, Technical Institutions*

Balancing Work and Personal Demands: Implications for Staff Commitment in Nigerian Public Institutions (A Study of Federal Polytechnic Kaura Namoda)

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Abstract

Balancing work responsibilities with personal and family demands has become a major challenge for employees in Nigerian public institutions, where increasing workload, limited staffing, and rigid administrative structures often blur the boundary between official and private life. This study examined the implications of work-life balance on staff commitment in Nigerian public organizations with specific focus on the Federal Polytechnic Kaura Namoda. The specific objectives are: (i) to assess the impact of family care responsibilities on employee retention rate in the institution, and (ii) to examine the impact of work intrusion into personal time on employees' willingness to volunteer for extra tasks. The study addressed the growing concern that excessive work demands and inadequate consideration for personal needs may reduce commitment, increase turnover intentions, and weaken discretionary behaviours that are vital for institutional effectiveness. A descriptive survey research design was adopted and data were analysed using analysis of variance to determine the impact of the independent variable on the dependent variable. Findings revealed that family care obligations significantly influence employee retention, as staff who receive organizational support are more likely to remain committed to the Polytechnic. The study also found that frequent intrusion of work into personal time discourages employees from volunteering for additional responsibilities beyond their formal roles. It was recommended that management should introduce flexible work arrangements, family-friendly policies, and clear boundaries on after-hours assignments to enhance staff commitment. Strengthening employee support systems will promote loyalty, improve performance, and foster sustainable organizational development in the Polytechnic.

Keywords: *Work- Life, Balance, Employee, Commitment & Public Institutions*

Emotional Intelligence, School-Based Stress, Social Skills and Social Adjustment as Correlates of Truant Behaviour and Academic Performance Among Secondary School Students in Kaduna State, Nigeria

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Abstract

The study examined emotional intelligence, school-based stress, social skills and social adjustment as correlates of truant behaviour and academic performance among secondary school students in Kaduna state, Nigeria. two objectives were stated and two null hypotheses were formulated and tested. The study adopted correlational survey research design and the population of the study was forty-nine thousand five hundred and ten (49,510) students of public senior secondary schools in Kaduna state, Nigeria. The sample size was three hundred and eight one (381) senior secondary year two (SS2) students. However, Multi-stage sampling procedure and six instruments were used for data collection. Emotional Intelligence Scale (EIS), School-based Stress Questionnaire (SBSQ), Social Skills Questionnaire (SSQ), Social Adjustment Questionnaire (SAQ), Truant Behaviour Questionnaire (TBQ) and English Language Performance Test (ELPT). The instruments were adapted and validated by experts in Test and Measurement and Educational Psychology, Federal University Dutsin-Ma. The reliability of the instruments were established after test re-test reliability was used for the interval of two weeks, and Pearson Product Moment Correlation Coefficient was employed which yielded 0.852 for Emotional Intelligence Scale, 0.845 for School-based Stress Questionnaire, 0.771 for Social Skill Questionnaire, 0.859 for Social Adjustment Questionnaire and 0.842 for Truant Behaviour Questionnaire respectively, meanwhile, Cronbach's Alpha was used to determine the reliability coefficient of English Language performance test and a reliability coefficient of 0.89 was obtained. The researcher used multiple regressions to test the hypotheses at 0.05 level of significance. However, the findings revealed that there was a significant combined influence of emotional intelligence, school-based stress, social skills and social adjustment on truant behaviour among secondary school students in Kaduna state, Nigeria which indicated (42.3%) $R^2 = .423$, $F = 32.532$; $p < 0.05$, and also there was a significant combined influence of emotional intelligence, school-based stress, social skills and social adjustment on academic performance among secondary school students in Kaduna State, Nigeria which revealed (83.2%) $R^2 = .832$, $F = 36.714$; $p < 0.05$. It was concluded that emotional intelligence, school-based stress, social skills and social adjustment correlates to truant behaviour and academic performance and based on the findings, it was recommended among others that government should develop a system that will identify and support students who are at risk of truant behaviour and poor academic performance and teachers should seek support from colleagues and collaborate with other counsellor to address the issue of truant behaviour and improve academic performance.

Keywords: *Emotional intelligence, School-based stress, Social skills, Social adjustment and truant behaviour*

Mixed Convection Flow of Viscous Reactive Fluid in the Presence of Radial Magnetic Field and Exponentially Pressure Gradient

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Abstract

This research looked at how an exponentially growing or decreasing pressure gradient affected the mixed convection flow of viscous reactive fluids between two concentric tubes with $r = 0$ and $r = b$ in the presence of a radial magnetic field. The nonlinear partial differential equation regulating flow formation is solved with the implicit finite difference form. Several physical factors were examined, including skin friction, heat transfer rate, mixed convection, viscous reactive fluid parameter, radial magnetic field, and exponential decaying/growing pressure gradient. Raising the values of Frank-Kamenetskii (λ), mixed convection (Gr), and exponential rising pressure term leads to an increase in fluid velocity. However, in the case of exponential decay, the parameter decrease reduces the fluid's velocity. The fluid's velocity decreases as the radial magnetic field increases. The results revealed that a minor increase in the viscous reactive fluid parameter significantly improved the energy profile. In all of the situations described, thermal management may be achieved by understanding the impact of each flow parameter and adjusting it accordingly.

Keywords: *Mixed Convection, Viscous Reactive Fluid, Radial Magnetic Field and Exponentially Pressure Gradient*

Integration of AI Technology to Capacity Building for Sustainable Development Goals Programme

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Abstract

Innovative approaches to capacity building in AI for Sustainable Development Goals (SDGs) offer promising avenues for addressing complex global challenges. This abstract explores the intersection of AI technology and sustainable development, highlighting novel strategies and initiatives aimed at leveraging AI to achieve SDGs. By examining case studies, pilot projects, and emerging trends, this paper identifies key opportunities and challenges in integrating AI into development efforts. It explores how AI-powered solutions can enhance efficiency, effectiveness, and inclusivity across various SDG sectors, including poverty alleviation, healthcare access, education, environmental conservation, and economic empowerment. Furthermore, this abstract discusses the importance of collaboration, ethical considerations, and policy frameworks in maximizing the potential of AI for advancing sustainable development agendas worldwide. Through critical analysis and actionable insights, it seeks to inform policymakers, practitioners, and researchers on innovative approaches to harnessing AI for the attainment of SDGs.

Keywords: *Integration of AI Technology, Capacity Building, Sustainable Development Goals Programme*

Optimising Supply Chain Management in Nigerian Construction Industry: Exploring Emerging Practices and Technological Trends

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Abstract

This study investigates current supply chain management (SCM) practices within Nigeria's construction industry, with a focus on Lagos, to identify operational challenges and explore opportunities for optimisation through technology. Using a qualitative exploratory design, data were collected from 20 senior construction professionals through semi-structured interviews. The findings reveal persistent issues such as procurement inefficiencies, fluctuating material prices, logistical delays, and fragmented communication among stakeholders. These challenges are compounded by economic instability and reliance on manual processes, which collectively hinder project delivery and increase costs. However, the study also highlights a gradual but notable shift toward digital transformation. Technologies such as Enterprise Resource Planning (ERP) systems, GPS tracking, Artificial Intelligence (AI), and drones are increasingly adopted to improve material traceability, streamline procurement, and enhance coordination. Participants emphasised the potential of tools like Building Information Modelling (BIM) and Augmented Reality (AR) in improving planning and decision-making, though concerns regarding infrastructure and technical skills remain. The study concludes that integrating advanced technologies can significantly enhance supply chain transparency, responsiveness, and cost-efficiency. It recommends increased investment in digital infrastructure, workforce training, and policy incentives to support technology adoption. These insights contribute to the discourse on construction SCM in emerging economies and provide actionable strategies for improving industry performance in Nigeria.

Keywords: *Supply Chain Management, Nigerian Construction Industry, Procurement, Digital Transformation, Logistics Optimization*

Human Capital Through Infrastructural Development in Tertiary Institutions

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Abstract

Human capital refers to the human beings contribute towards achieving the set goals of a given establishment. Human Capital is the economic value of an individual or group, experience and skills. Nigeria is said to be deficient in human capital and infrastructure and as a developing economy, one of the defining features of its growth would be underpinned by the improvement of human capital and massive development of physical infrastructure. This study investigated human capital through infrastructural development in tertiary institutions in Gombe state. Using a self-designed questionnaire titled "Infrastructural Development and Human Capital Questionnaire (IDHCQ)" and Available Infrastructure Checklist (AIC), data were collected from a random sample of 800 final year students drawn from federal and state-owned tertiary institutions. The data collected were analysed using mean to answer the research questions. Any item with mean value of 3.50 and above was regarded as agreed while mean less than 3.50 was rejected. It was found that there is no significant difference in infrastructural development between the state and federal tertiary institutions. The study recommended among others that federal and state governments increase funding towards development of the infrastructure for human capital. It is also recommended that the quality of tertiary education in the state need not to be compromised by over-enrollment, over-crowdedness, and the multi-campus system

Keywords: *Human Capital, Infrastructural Development, Tertiary Institutions, Facilities*

Appraising the Participation of Females in Welding and Fabrication Trade Within the Federal Ministry of Education Technical and Vocational Education and Training (FME-TVET) Initiative in Nigeria

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Abstract

One unresolved reality undermining the successful implementation of TVET programs in most developing countries is the persistent underrepresentation of women. This study appraises the participation of female trainees in the Welding and Fabrication trade under the Federal Ministry of Education's Technical and Vocational Education and Training (FME TVET) Initiative, which is a fully funded training with a monthly stipend, and start-up support to reduce youth unemployment and strengthen economic growth. Relying on secondary data, national TVET enrollment trends, and systemic literature, this paper evaluates the socio-cultural, institutional, and financial barriers limiting female representation. The findings reveal that while the FME TVET initiative has modernized the organization of technical training, female enrollment in skilled trades like fabrication and welding remains profoundly low compared to soft vocational trades. Sociocultural stereotypes, lack of gender-segregated facilities, and safety concerns deter females from choosing heavy skilled trades. The study concludes that the underrepresentation of women in TVET is not only a social concern but an economic issue with prevalent implications. Thus, achieving true economic empowerment requires intentional, gender-targeted recruitment and specialized support infrastructures to integrate women into Nigeria's high-value industrial workforce.

Keywords: *Technical and Vocational Education and Training (TVET), female, Welding and Fabrication, Skills, Nigeria*

Aid and the Politics of Trade and Development in Africa

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Abstract

Trade relation between African states and European and Western world has been an unequal one since mercantilist and colonial era. However, with the gaining of political independence by African countries in the circa 1960, it was thought that the relationship will be an equal one with fair dealing between and among the states involved. Alas new forms of trade very detrimental to Africa and conditionality attached sometimes through the use of financial and trade institutions and partnership like the African Partnership Agreements ACP as obtained in the Cotonou and Lome agreements, the World Bank, I.M.F and the WTO. This research solely relied on secondary sources of data which include journal articles, text books, newspapers, magazines and other relevant materials sourced from the internet. Thus, the work discovered that the difficulty and conditionality imposed on African states in their dealing with advanced industrialized countries are responsible for the continent's inability to industrialize. The work adopts Issa Shivji's Structural Disarticulation Thesis; producing of we cannot consume and consuming what we cannot produce.

Keywords: *Trade, African Partnership Agreements, World Bank, Lome Agreement*

Sustainable Urban Development in Nigeria: A Scientometric Exploration of Emerging Housing Trends

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Abstract

The housing sector in Nigeria faces critical challenges, including affordability, inadequate infrastructure, and rapid urbanisation, which mirror broader issues across Sub-Saharan Africa. Despite increasing research efforts, a comprehensive understanding of housing trends and solutions remains fragmented. This study employs a scientometric analysis to map Nigeria's housing research landscape, identifying key themes, scholarly contributions, and emerging trends. Using bibliometric tools, data from Scopus and Web of Science were analysed to assess publication patterns, co-authorship networks, and thematic evolution over time. Findings indicate a growing focus on sustainable housing, urban planning, and smart technologies, yet research gaps persist in areas such as low-cost housing innovations, policy implementation, and interdisciplinary approaches. While technological advancements and societal needs shape the discourse, there is limited integration of employment, health, and eco-research perspectives. Addressing these gaps is crucial for informing policies that promote inclusive and resilient housing solutions. This study contributes to the broader multidisciplinary discourse on sustainable development in Sub-Saharan Africa by providing empirical insights into Nigeria's housing research. Future research should explore cross-sector collaborations, indigenous construction methods, and the socio-economic impacts of housing policies. Strengthening these areas will enhance sustainable housing strategies and inform evidence-based policymaking across the region.

Keywords: *Housing Research, Sustainable Development, Urbanisation, Scientometric Analysis, Sub-Saharan Africa*

Enhancing Security and Governance in Building Construction Through Digital Technology and Data Analytics

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Abstract

Enhancing security and governance in building construction is crucial for economic Development, particularly in Nigeria's growing infrastructure landscape. This study explores the integration of digital technologies and data analytics to improve security and governance in building construction projects. I examine the role of technologies like Building information Modeling (BIM), internet of Thing (IoT), and data analytics in enhancing site security, monitoring compliance, and promoting transparency. Two research objectives, two research questions and two research hypotheses. will be used. A mixed – methods approach involving surveys and case studies of construction projects in Nigeria reveals key benefits, improved regulatory compliance, and increased stakeholder trust. The study proposes a framework for adopting digital technologies to strengthen governance and security in building construction.

Keywords: *Building Construction, Digital Technology, Data analytics, Security, Governance, Nigeria, BIM, IoT.*

Brilliant But Behind: Gender Disparity in Post-Academic Attainment Among Nigerian Women

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Abstract

Despite surpassing their male counterparts academically across all tiers of education in Nigeria, girls frequently struggle to translate this success into leadership roles and societal influence. This empirical study examines the factors contributing to this decline in female prominence post-education and investigates the reasons why early academic excellence among Nigerian girls seldom evolves into enduring leadership or societal impact. Drawing upon school performance records, interviews, focus group discussions, and national gender statistics, the research scrutinizes cultural, economic, religious, and structural variables that obstruct female advancement beyond the classroom. Employing Gender Relational Theory and Social Role Theory, the study elucidates critical issues such as early marriage, workplace gender bias, societal expectations of motherhood, insufficient female mentorship, and restricted access to influential networks. The findings reveal that entrenched gender norms and patriarchal socialization inhibit the conversion of academic achievement into societal leadership for women. The study advocates for targeted policy reforms, enhanced career support systems for young women, and educational strategies that extend empowerment beyond mere academic performance toward long-term career and leadership development. The ultimate objective is to reconfigure Nigeria's socio-educational landscape to ensure that excellence among girls is not only acknowledged within academic institutions but also celebrated and sustained within the broader societal context.

Keywords: *Gender disparity, Leadership roles, Academic excellence, Nigerian women, Early marriage, Societal barriers, Policy reforms, Career development, Patriarchal socialization, Female mentorship.*

Capital Structure and Financial Performance of Listed Deposit Money Banks in Nigeria

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Abstract

A company's financial structure is determined by its financing choices, and poor financing choices can result in poor financial performance hence, business failure. This study, therefore, investigates the relationship between capital structure and financial performance. The population of the study was thirteen (13) listed deposit money banks in Nigeria. The purposeful sampling method was adopted to select eleven (11) listed Banks as the sample for the study. The study employed quasi experimental research design with secondary panel data from the financial statements for the period 2013-2022. Dynamic panel-data estimation, one-step GMM was employed to test the hypothesis with the aid of STATA 14. The study found that both long-term debt to equity ratio and short-term debt to equity ratio have positive and significant relationship with financial performance (ROE). Also, long-term debt-to-asset ratio has a positive but not significant relationship with performance, and total debt to equity has a negative but significant relationship with performance (ROE). The paper concludes that Modigliani and Miller (1958) theory should be revisited, as evidence from this study proves contrary to this popular theory that says financial mix is irrelevant. The paper therefore recommends that managers of listed deposit money banks in Nigeria should be cognizant of this fundamental fact about finance mix and strive to maintain an optimum mix for better performance.

Keywords: *Capital Structure, Financial Performance, Long-Term Debt to Equity, Short-Term Debt to Equity, Return on Equity*

Challenges and Prospects of Economic Reform of Corruption, Insecurity and Education in Nigeria

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Abstract

This study explores the challenges and prospects of economic reform in Nigeria with particular focus on the persistent issues of corruption, insecurity, and education. Nigeria, despite being rich in natural and human resources, continues to struggle with implementing sustainable economic reforms due to deeply rooted systemic problems. Corruption diverts public resources and weakens institutional capacity, while insecurity disrupts socio-economic activities and deters both domestic and foreign investment. Furthermore, the deteriorating state of the education sector undermines the development of a skilled and productive workforce necessary for economic transformation. Using a combination of theoretical analysis and empirical literature, Qualitatively, this paper adopts secondary sources such as chapters in books, journal articles, books, internet materials, newspapers, and social media captions and narrations. the paper examines how these three critical factors hinder reform efforts and evaluates potential pathways for improvement. The findings reveal that without political will, institutional strengthening, security sector reform, and comprehensive educational development, economic reforms are likely to remain ineffective. The study concludes by recommending multi-sectoral approaches that promote transparency, accountability, peace building, and educational revitalization as vital components of successful economic reform in Nigeria.

Keywords: *Challenges, Corruption, Economic reform, Prospects, Insecurity*

Comparative Effect of Pig Manure (PGM) and Graded Levels of NPK on Foliage Yield of Two Varieties of Fluted Pumpkin (*Telfaria Occidentalis* Hook F) Cultivated in Minna, Nigeria

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Abstract

Field trial was conducted during 2022 farming season on a farm plot located at Bosso Estate Minna ($9^{\circ} 45' \text{N}$; $6^{\circ} 7' \text{E}$) in the Southern Guinea savanna agro-ecological zone of Nigeria to determine the comparative effect of varieties and NPK rates + optimum pig manure on foliage yield of fluted pumpkin (*Telfaria occidentalis* Hook F). Two varieties (Ugu-ala and Ugu-elu) and five rates of NPK (0kg, 100kg, 200kg, 300kg and 4000kg of NPK/ha⁻¹) + optimum rate of pig manure (15t ha⁻¹) were used in a 2 x 5 factorial randomized complete block design (RCBD). The following foliage parameters were measured: Vine length, vine fresh and dry weight, number of branches, number of leaves, leaf fresh and dry weight, plant fresh and dry weight. At maturity data were taken from the two inner rows of each treatment at 8, 12 and 16 weeks after planting (WAP). Ugu-ala gave significantly ($P < 0.05$) best foliage yield compared with other Ugu-elu across the selected WAP. The highest significant ($P < 0.05$) foliage yields were recorded from plants that received combined application of 15 t ha⁻¹ of pig manure + 300 kg of NPK/ha⁻¹ at 12 and 16 WAP, while the least foliage yields were obtained from treatment group applied with 0t ha⁻¹ manure. Therefore, the combined application of pig manure at 15 t ha⁻¹ and 300 kg of NPK/ha⁻¹ and the choice of Ugu-ala were observed as the optimum agronomic intervention to obtain the highest foliage yield of fluted pumpkin (*Telfaria occidentalis*).

Keywords: *Pig Manure, NPK, Foliage, Varieties and Telfaria occidentalis*

The Nexus Between Language, Conflict Resolution, and Rural Development in Zamfara State

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Abstract

This paper examines the critical role of language in conflict resolution and its implications for rural development in Zamfara State, Northern Nigeria. Zamfara has experienced recurrent rural conflicts, including banditry, communal disputes, and clashes between farmers and herders, which have hindered development initiatives. Language, encompassing local dialects, Hausa lingua franca, and indigenous communicative practices, plays a pivotal role in mediating conflicts, fostering dialogue, and building trust among rural communities. The study highlights how effective linguistic strategies, including culturally sensitive communication, negotiation, and the use of vernacular media, can enhance conflict resolution efforts and promote socio-economic development in rural areas. Drawing on sociolinguistic theory and conflict resolution frameworks, the paper argues that language is not merely a communication tool but a mechanism for peacebuilding and sustainable rural development. Recommendations include the integration of language-sensitive programs in community development, training of local mediators in indigenous communication techniques, and the promotion of multilingual dialogue platforms to strengthen social cohesion and economic productivity in Zamfara State.

Keywords: *Language, Conflict Resolution, Rural Development, Zamfara State, Hausa, Peacebuilding, Indigenous Communication, Socio-Economic Development*

Teacher–Student Relationship and Student Academic Performance in Selected Tertiary Institutions in Kwara State, Nigeria

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Abstract

The study examined the influence of teacher–student relationship on students' academic performance in selected tertiary institutions in Kwara State, Nigeria. A descriptive survey design was adopted, and 400 students were selected through stratified random sampling from Kwara State College of Health Technology, Offa; Kwara State College of Education, Ilorin; and Kwara State College of Education (Technical), Lafiagi. A structured questionnaire was used for data collection, and data were analyzed using descriptive and inferential statistics, including Pearson correlation, multiple regression, and mediation analysis. Findings revealed a significant positive relationship between teacher–student relationships and students' academic performance. Closeness and teacher support significantly predicted academic performance, while conflict had a negative effect. Teacher support partially mediated the relationship between closeness and academic performance. The study concludes that positive teacher–student relationships are critical to improving students' academic success in tertiary institutions.

Keywords: *Teacher–Student Relationship, Academic Performance, Tertiary Institutions, Teacher Support, Student Engagement, Kwara State.*

Digital Transformation and its Impact on Office Technology Practices in Federal Polytechnic Kaura Namoda, Zamfara State

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Abstract

The rapid growth of digital technologies has significantly transformed modern office operations and administrative practices. This paper examines the influence of digital transformation on office technology, focusing on automated systems, digital records management, cloud-based platforms, and modern communication tools. These technologies have streamlined workflows, reduced reliance on paper-based processes, improved information accessibility, and enhanced staff collaboration. Using a descriptive and analytical approach, the study explores how digital transformation has reshaped the roles, expectations, and competency requirements of office technology personnel. Emphasis is placed on the growing need for digital skills, efficient information management, and adaptability among office managers and administrative professionals. While digital transformation offers benefits such as increased efficiency, faster administrative processes, and organisational flexibility, it also presents challenges, including limited technical skills, resistance to change, data security concerns, and inadequate infrastructure, particularly in developing environments. The paper concludes that organisations that strategically adopt digital technologies and invest in continuous staff training are better positioned to achieve improved productivity and effective service delivery.

Keywords: *Digital Transformation, Office Technology, Administrative Practices, Automation, Digital Office*

Modelling the Exchange Rate Volatility and Capacity of the Nigerian Naira Against the Us Dollar (1990–2025)

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Abstract

This paper investigates the long-term dynamics and predictive capacity of the Nigerian Naira (NGN) exchange rate relative to the United States Dollar (USD) over a thirty-five-year period. Nigeria's foreign exchange ecosystem has undergone significant structural transformations, moving from fixed and pegged regimes to various managed-float systems and recent market-driven liberalizations. Using monthly time-series data from 1990 to 2025, this study employs a hybrid econometric approach, utilizing Vector Error Correction Models (VECM) to capture long-run cointegrating relationships and Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models to analyze persistent volatility clusters. The analysis accounts for major economic shocks, including the 2008 global financial crisis, the 2016 recession, the COVID-19 pandemic, and the 2023-2024 currency reforms. Preliminary findings indicate that while crude oil prices and external reserves remain primary determinants of exchange rate stability, the widening gap between official and parallel markets has historically impeded the Naira's price discovery capacity. Furthermore, the study evaluates the predictive accuracy of ARIMA-based forecasting against machine learning residuals. The results suggest that institutional quality and monetary policy consistency are more critical to exchange rate "capacity" than mere reserve accumulation. This research provides a comprehensive policy framework for the Central Bank of Nigeria (CBN) and international investors to navigate currency risks in an increasingly volatile frontier market.

Keywords: *Exchange Rate Volatility, Nigeria Naira, Econometric Modelling, GARCH, Monetary Policy, Currency Reform.*

The Role of Digital Governance in Combating Corruption and Enhancing Transparency in Kwara State Public Service

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Abstract

Digital governance has emerged as a vital innovation in public administration, aimed at reducing corruption and enhancing transparency within government institutions. Despite its increasing adoption both globally and locally, limited empirical evidence exists on its effectiveness in the public sector, especially in the context of Kwara State. While digital tools like e-procurement, electronic payroll, online tax systems, and digital record management are widely promoted as solutions to administrative inefficiencies and corruption, systematic evaluations of their impact in this specific setting remain scarce. This study examines the role and effectiveness of these digital governance initiatives in combating corruption and promoting transparency in Kwara State's public service. Employing a descriptive survey design, data were gathered from 350 civil servants and stakeholders across various ministries, departments, and agencies using a structured questionnaire (Cronbach's alpha = 0.89). The data were analyzed using both descriptive and inferential statistics to assess perceptions and the impact of digital governance tools on accountability. Descriptive statistics revealed that respondents rated e-procurement highly in reducing financial mismanagement (Mean = 3.92, SD = 0.84), electronic payroll systems in curbing ghost workers (Mean = 3.87, SD = 0.91), online tax platforms in improving revenue transparency (Mean = 3.76, SD = 0.88), and digital record management in enhancing accountability (Mean = 3.65, SD = 0.95). Inferential analysis using Chi-square further showed a significant relationship between adoption of digital governance tools and perceived reduction in corruption ($\chi^2 = 44.16$, $df = 4$, $p < 0.01$). The findings suggest that digital governance minimizes human discretion in administrative processes, creates verifiable digital footprints, and strengthens oversight mechanisms. The study concludes that digital governance plays a pivotal role in enhancing transparency and combating corruption in Kwara State's public service. However, challenges such as inadequate ICT infrastructure, limited digital literacy among staff, and resistance to change persist. Recommendations include capacity-building programs, investment in ICT infrastructure, and stronger policy frameworks to institutionalize digital governance practices.

Keywords: *Digital governance, Corruption, Transparency, Public service, Kwara State*

Mitigating Educational Inequality: Strategies for Tackling Youth Vulnerability in Underserved Rural Districts

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Abstract

In alignment with the African Union's Agenda 2063—specifically the aspiration for a prosperous Africa based on inclusive growth and human capital development—this paper examines the persistent socio-economic barriers that impede educational equity in rural districts. Despite various national interventions, youth in underserved rural peripheries continue to face heightened vulnerabilities, ranging from systemic poverty and infrastructure deficits to the digital divide and socio-cultural constraints. Adopting a multidisciplinary approach rooted in Social Studies and Educational Sociology, this research utilizes a qualitative case study design (or "mixed-methods approach," depending on your preference) to investigate the lived experiences of students in [Select a specific district/region]. Preliminary findings suggest that traditional "top-down" educational policies often fail to account for the unique ecological systems of rural communities, thereby widening the inequality gap between urban and rural cohorts. The paper proposes a framework of sustainable strategies, including the integration of indigenous knowledge systems (IKS) into the curriculum, community-led vocational training, and the decentralization of educational resources through digital innovation. By addressing these structural vulnerabilities, the study provides actionable insights for policymakers and educators to foster a more inclusive and resilient educational landscape. Ultimately, this research argues that mitigating rural educational inequality is not merely a pedagogical necessity but a prerequisite for achieving an integrated and peaceful African continent.

Keywords: *Educational Inequality, Youth Vulnerability, Rural Development, Agenda 2063, Social Studies, Inclusive Development*

Early Detection of Student Depression Using Machine Learning and Ensemble Modeling of Lifestyle and Academic Indicators

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Abstract

Student mental health has become an increasing concern in higher education institutions worldwide. A range of factors, including academic pressure, social environment, and financial challenges, can contribute to depression among university students. Counselling, advisory services, and mentorship programmes are commonly implemented to support students experiencing psychological distress. These approaches are often limited in providing timely and proactive identification of individuals at risk. Consequently, early detection of depression risk among students is essential for effective intervention and support. This study, therefore, investigates the effectiveness of machine learning (ML) techniques for detecting depression among university students using lifestyle, demographic, academic, and socio-economic indicators. The dataset contains 3,350 observations and 12 attributes describing students' characteristics. Several classification algorithms were examined, including Logistic Regression, Random Forest, Decision Tree, Support Vector Machine (SVM), K-Nearest Neighbors (KNN), Naïve Bayes, and Extreme Gradient Boosting (XGBoost). Model performance was evaluated using accuracy, precision, recall, and F1-score. Improving on the predictive performance, ensemble strategies based on voting and stacking were applied using the 3-top performing base models. Results from the full feature set show that XGBoost achieved the best individual performance with an accuracy of 97.16% and an F1-score of 0.947. Ensemble models further improved predictive performance, achieving an accuracy of 97.46% and an F1-score of 0.952. Enhancing interpretability and reduce feature redundancy, models were retrained using the most important features identified through feature importance analysis. This reduced feature configuration produced improved performance, where the stacking ensemble achieved the best overall results with an accuracy of 97.91% and an F1-score of 0.960. These outcomes suggest that ML-based decision support systems could assist educational institutions in identifying students at risk of depression and facilitating early intervention strategies to improve student well-being.

Keywords: *Counselling, Depression, Mental health, Students, Machine Learning*

Leveraging Virtual and Augmented Reality for Skills Development and Economic Growth in Nigeria, a Digital Transformation Approach

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Abstract

The rapid advancement of immersive technologies such as Virtual Reality (VR) and Augmented Reality (AR) presents new opportunities for accelerating economic development in emerging economies. In Nigeria, where youth unemployment and skills gaps remain critical challenges, the integration of VR/AR into technical and vocational education offers a transformative pathway for enhancing workforce readiness and productivity. This study examines how VR and AR can be leveraged to improve practical skill acquisition among Electrical and Electronic Technology students and its broader implications for economic growth. Adopting a digital transformation framework, the study explores the intersection between immersive learning technologies, human capital development, and economic competitiveness. Using a mixed-method approach, the research evaluates student readiness in terms of awareness, accessibility, and acceptability, while also assessing the potential of VR/AR to reduce training costs, improve efficiency, and stimulate innovation-driven enterprises. Findings suggest that while awareness and acceptability of VR/AR technologies are high among students, accessibility remains a significant barrier due to infrastructural and financial limitations. Despite this, the integration of immersive technologies demonstrates strong potential to enhance technical competencies, foster entrepreneurship, and support industrial development. The study concludes that strategic investment in digital infrastructure, policy support, and public-private partnerships are essential to harness VR/AR technologies as catalysts for sustainable economic development in Nigeria.

Keywords: *Digital Transformation, Human Capital, Readiness and Economic Implications*

Education, Human Capital and Social Development

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Abstract

Education remains a critical driver of human capital formation and social development in contemporary societies. This paper examines the interrelationship between education, human capital, and social development, with emphasis on how functional and inclusive education systems enhance knowledge, skills, values, and productivity. It discusses the role of education in promoting employability, innovation, social cohesion, and national development. Drawing on educational and social perspectives, the paper highlights challenges limiting effective human capital development, including inequality, unemployment, and insecurity. It argues that sustained investment in quality education and skills-oriented training is essential for strengthening human capacity and fostering sustainable social development. The paper concludes by emphasizing the need for policies that prioritize education as a strategic tool for transforming individuals and society.

Keywords: *Education, Human Capital, Social Development and Development Policy*

Examining the Effect of Workplace Envy on Citizenship Behaviour of Academic Staff in Nigerian Polytechnics

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Abstract

Workplace envy has become a critical behavioural challenge in academic institutions, particularly in Nigerian Federal Polytechnics where competition for promotion, recognition, and limited resources is intense. Such envy often manifests through negative interpersonal behaviours that undermine collaboration and the willingness of academic staff to engage in employee citizenship behaviour, which is essential for institutional effectiveness. Despite its importance in enhancing productivity and service delivery, many polytechnics experience poor collaboration, low commitment to extra responsibilities, and reluctance among staff to assist one another. Evidence suggests that workplace envy frequently results in colleagues' sabotage and withholding of valuable knowledge, which may weaken extra-role and voluntary helping behaviours. It is against this background that this study investigated the influence of workplace envy on employee citizenship behaviour of academic staff in Nigerian Federal Polytechnics. The study specifically sought to: (i) assess the effect of colleagues' sabotage on employee extra-role behaviour; and (ii) examine the effect of reduced knowledge sharing on employee voluntary helping behaviour. A survey research design was adopted, focusing on academic staff of Federal Polytechnic Kaura Namoda. Data were analyzed using regression analysis at 0.05 level of significance. Findings revealed that colleagues' sabotage has a significant negative effect on employee extra-role behaviour, indicating that envy-driven actions reduce willingness to perform beyond formal job requirements. The study recommended that Federal Polytechnics should promote teamwork, transparency, and equity, while strengthening policies that discourage sabotage and encourage knowledge sharing through fair reward systems, and interpersonal relationship training.

Keywords: *Workplace, Envy, Citizenship & Behaviour*

Harnessing Democratic Cooperative Practices for Inclusive and Sustainable Economic Development in Nigeria

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Abstract

Cooperative societies have become important institutional mechanisms for promoting grassroots economic participation, financial inclusion, and community development. In Nigeria, where poverty, unemployment, and economic inequality remain persistent challenges, democratic cooperative practices offer a viable pathway toward inclusive and sustainable economic development. This paper examines the role of democratic governance within cooperative societies and its contribution to economic development in Nigeria. Using secondary data obtained from academic literature, government reports, and institutional publications, the study analyzes how cooperatives promote financial inclusion, agricultural productivity, employment generation, and poverty reduction. Evidence indicates that cooperative societies in Nigeria account for more than 30 million members across hundreds of thousands of registered societies, contributing significantly to grassroots economic development. The study also identifies major challenges affecting cooperative development, including weak governance structures, limited access to capital, and inadequate policy implementation. The paper concludes that strengthening democratic cooperative practices through improved governance, institutional support, and policy reforms will enhance the contribution of cooperatives to inclusive and sustainable economic development in Nigeria.

Keywords: *Cooperative societies, democratic governance, financial inclusion, inclusive development, Nigeria.*

An Investigation in the Relationship Between Substance Abuse and Youth Involvement in Property Crime in Yelwa Area of Bauchi Metropolis, Nigeria

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Abstract

This study investigates the relationship between substance abuse and youth involvement in property crime in the Yelwa area of Bauchi Metropolis, Nigeria. The objectives of this research is to examine the nature of substance abuse among youths, identify the causes leading to their involvement in property crime, assess the effects of substance abuse, explore factors influencing drug use, and propose solutions to combat the problem. The study provides insights into the socio-economic factors driving substance abuse and its contribution to property crimes such as theft and burglary. The research adopts a quantitative approach, using a survey. The population consists of 800 youths aged 18 to 35 in Yelwa, and a sample size of 334 was determined using the Taro Yamane formula. Data was collected through self-administered questionnaires to assess the relationship between substance abuse and crime. Frequency distribution table was used to analyze the data. The findings revealed that substance abuse, particularly marijuana, alcohol, and inhalants, is prevalent among youths and factors include peer group, unemployment that linked to property crimes. It was also found that family background and early exposure to drugs play a critical role in the persistence of drug abuse. The study concludes that a comprehensive interventions of community leaders, government, awareness programs and youth empowerment may help. Recommendations include; the implementation of family-based interventions, youth engagement programs, and policy focus on substance abuse prevention at local and national levels is an essential for reducing crime and fostering a safer community.

Keywords: *Investigation, Substance, Abuse, Youth, Crime*

Towards Inclusive Urban Planning and Design: Systematic Review on Informal Settlements in Peri-Urban Africa

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Abstract

This study systematically reviews existing literature on informal settlements in peri-urban areas, with a focus on the architectural, environmental, and governance challenges shaping their emergence and persistence. Peri-urban zones, situated at the interface of rural and urban spaces, are hotspots for unregulated urban expansion due to a combination of rapid population growth, weak urban planning, and land commodification. Informal settlements in these areas are often marked by inadequate housing, insecure land tenure, and insufficient infrastructure. While socio-economic and governance factors driving informal settlements are well-documented, the spatial and architectural dimensions remain underexplored. This review highlights the need for a more integrated understanding of informality, one that transcends socio-economic boundaries and addresses both elite and marginalised forms of informality. The study employs the PRISMA methodology to critically assess existing research, uncover key dynamics, and explore conceptual debates around informality. The findings emphasise the importance of context-sensitive governance frameworks, the role of traditional land tenure systems, and the integration of incremental upgrading strategies. This review aims to inform urban planners, policy-makers, architects, and local governments in developing inclusive, resilient, and sustainable urban development strategies for peri-urban informal settlements, offering insights into the infrastructural and governance gaps that hinder effective urban integration.

Keywords: *Informal Settlements, Peri-Urban Areas, Land Governance, Urban Planning, Incremental Upgrading*

Innovative Methods in Teaching French Language and Culture: A Case Study of Federal Polytechnic Kaura Namoda

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Abstract

This paper explores innovative methods in teaching French language and culture at Federal Polytechnic Kaura Namoda, Nigeria. It highlights the importance of student-centered approaches, technology integration, and cultural immersion in enhancing French language acquisition. The study employed a mixed-methods approach, combining survey data from students and lecturers with classroom observations. Results show that incorporating authentic materials, project-based learning, and virtual cultural exchanges significantly improved students' language proficiency and cultural competence. The paper concludes with recommendations for French language instructors and curriculum developers.

Keywords: *French language teaching, Innovative methods, Culture, Technology Integration, Student-centered approaches, Language proficiency*

Integration of AI-Driven Improved Sanitation Architecture Innovations, Strategies and Solutions Towards ODF in Bauchi Built Environment

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Abstract

The pursuit of Open Defecation Free (ODF) status in Nigeria, particularly in states like Bauchi, has historically relied on conventional Community-Led Total Sanitation (CLTS) approaches. However, the sustainability of these interventions is often compromised by inadequate facility maintenance, poor design aesthetics, and lack of economic incentives. This paper explores the integration of Artificial Intelligence (AI) and improved toilet architecture innovations as a transformative strategy for achieving and sustaining ODF in the Bauchi built environment. By leveraging AI-driven generative design, parametric modeling, and Internet of Things (IoT) predictive maintenance, architects and urban planners can develop culturally resonant, climate-resilient, and economically viable sanitation facilities. This research proposes a framework where AI algorithms analyze local topographical, climatic, and socio-cultural data to generate optimized architectural designs for public and communal toilets. Furthermore, the integration of AI-powered digital twins and smart sensors facilitates real-time monitoring of facility usage, structural integrity, and environmental impact. The findings suggest that AI-driven architectural innovations can significantly enhance community acceptance, reduce slippage from ODF status, and foster sustainable sanitation practices in Bauchi State.

Keywords: *Artificial Intelligence, Toilet Architecture, Open Defecation Free (ODF), Generative Design and Smart Sanitation*

Mathematical Modelling of Single-Phase Gas Flow in a Pipeline Using Flux Vector Splitting Method

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Abstract

Transporting natural gas via pipelines requires precise mathematical modeling to forecast flow dynamics and ensure smooth, efficient operations accurately. Accurate prediction of pressure, velocity and overall behavior are essential for optimizing performance, minimizing risks and ensuring safety in the system highlighting the critical roles of robust computational and engineering methods. this research develops a mathematical model to describe single phase gas flow in pipelines, grounded on the fundamental conservation laws of mass, energy and momentum. The resulting governing equations are formulated in hyperbolic form, making them compatible with numerical methods designed for comprehensive fluid flow analysis. To ensure reliable, accurate and stable computational solutions, the flux vector splitting (FVS) techniques is applied in discretising the equations. This approach not only improves numerical stability but also enhances precision in capturing flow dynamics, providing a robust framework for simulating gas transport behavior within pipelines systems under varying operational and physical conditions. The approach enables the separation of flux terms into positive and negative components, improving numerical stability and effective capturing waves propagation phenomena. The developed models provide insights into the dynamic behavior of gas under varying flow conditions, offering a reliable tool for pipeline design, optimization and operational control. The results demonstrate the capability of the FVS methods in handling nonlinearities and discontinuities, making it a robust technique for pipeline gas flow simulation in a system. The study confirms the developed model reliability, showing strong agreement with analytical solutions. Results reveal that as the mass flow rate increases, the pipe pressure decreases while the velocity rises due to reduced pressure. This inverse relationship highlights few principles of fluid dynamics, illustrating how energy is transferred from pressure to kinetic form. The model effectively predicts these behaviors offering valuable insights for pipeline efficiency, safety and operational optimization in natural gas transport system. However, it has been shown that the environmental temperature gradients significantly affect the gas temperature during transportations, as an increase in the geo-thermal gradients results in a higher temperature of the transported gas. Finally, in accounting for pipe inclination, roughness, compressibility and heat transfer, the model provides a realistic representation of an actual pipeline system.

Keywords: *Single phase, Gas flow, Pipeline*

Shaping the Future of Africa Workplaces: Trends on Sustainable Windowless Office Design in Developing Countries

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Abstract

This study explores the intersection of sustainability and office design, focusing on implementing windowless office environments in Africa and developing countries. Through a systematic review of scholarly literature and utilization of advanced methodologies like VOSviewer software, the study examines the physical, psychological, technological, and economic dimensions of windowless office design (WOD). Despite originating predominantly from developed nations, emerging trends such as biophilic design and virtual reality offer promising avenues for enhancing the well-being and productivity of office environments in diverse socio-economic contexts, including Africa. The analysis underscores the importance of optimizing indoor environments, addressing psychological impacts, and leveraging technological advancements to create comfortable, energy-efficient, windowless office spaces, especially in developing countries. Additionally, in light of the COVID-19 pandemic, there is a growing emphasis on the health and safety aspects of WOD, necessitating holistic approaches that integrate innovative solutions. By fostering interdisciplinary research and collaboration, this study aims to contribute to developing sustainable, inclusive, and resilient office environments that prioritize the well-being and productivity of individuals across Africa, among other developing nations.

Keywords: *Windowless Office, Workplace Environment, Indoor Air Quality, Virtual Reality, VOSviewer Analysis*

Analysis of Rainfall and Temperature Trends, Magnitude and Coefficient of Variation Over Selected Local Government Areas in Niger State, Nigeria

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Abstract

The impact of climate change is repeatedly proved by rainfall, temperature (minimum and maximum) and its attributes. Subsequently, this study analyzes rainfall and temperature trends, magnitudes of change in selected local Government areas of Niger, Nigeria. This study utilized daily rainfall data, maximum and minimum temperature. The data was acquired for the periods of 30 years (1988-2018). Mann-Kendall trend test, Theil-Sen's slope estimator (β), methods were adopted for data analysis. The findings revealed that general downward rainfall trends are detected at Borgu, Lavun, Magama, and Rijau, at various alpha levels. The magnitude of the annual rainfall trends reveals that most of the years have a decreasing rainfall magnitude with a maximum at Borgu and Magama (-11.467 and -11.053mm yr⁻¹). The general pattern of the coefficient of variation shows that the rainfall variability is less than 50% across the study points. The results also showed general upward minimum temperature trends in the study area at $\alpha = 0.001$. The magnitude of change in minimum temperature reveals that most of the years have an increased minimum temperature, with the highest at Lavun (50.95yr⁻¹). The general pattern of the coefficient of variation shows that the temperature variability is less than 10% across the study points. Lavun has the highest (9.24%) variability, while Paikoro and Rijau have the least (3.05%, 3.1%) variability. The result also showed a general downward trend in maximum temperature in the study area at various alpha levels. The magnitude of the maximum temperature trends reveals that most of the years have a decreasing maximum temperature with a maximum at Wushishi (-20.357), Magama (-18.174), Mokwa (-18.174), Munya (-18.174), and Paikoro (-18.174). The general pattern of the coefficient of variation shows that the temperature variability is less than 10% across the study points. Wushishi (2.84) has the highest variability, while Borgu has the least (1.52%) variability. The mixed trends in the rainfall and temperature might be an indication of climate change. And it is understood that the changes in rainfall and temperature circulation have negative effects on water availability for crops, and thus affect productivity in rain-fed farming.

Keywords: *Rainfall trends; Temperature trends; Magnitude of change; Mann-Kendall test*

External Debt Accumulation and the Response of the Marginal Propensity to Import in Nigeria

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Abstract

This paper focuses on the examination of the response of import (proxied by the marginal propensity to import) to external debt accumulation in Nigeria. The study covered the period from 1982 to 2022 and both the impulse response function and the variance decomposition were used for analysis. It was found that marginal propensity to import responded positively to external debt in all the periods. This result is supported by the result of the variance decomposition which revealed that shock to marginal propensity to import was explained by shock to external debt. In another vein, marginal propensity to import was found to respond positively to exchange rate in all the periods and that in all the periods; marginal propensity to import responded positively to trade openness. These findings have policy implications for the country and it is suggested that import from external debt should be restricted to items that enhance productivity.

Keywords: *External debt, Importation, Exchange rate, Trade openness*

Quality Evaluation of Street–Hawked Soya Beans Milk (Dage), Sold and Consumed Withing Kano State Metropolis. Nigeria

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Abstract

This study was carried out to evaluate the physicochemical properties, proximate composition, anti-oxidant properties and anti-nutritional content, micro and macro elements concentrations, and sensory acceptability of soybean milk ("dage") sold within kano state metropolises, Nigeria. The drinks were analyzed for (Physico-chemical (pH, total titratable acidity, Brix and turbidity) anti-nutritional (Phyate, and oxalate), anti-oxidant (flavonoid), proximate (moisture, fat, protein, ash, crude fiber, carbohydrate and total energy contents), Macro-element (calcium, iron, potassium, and magnesium). And Micro elements (cadmium, nickel and lead). The results showed significant variations in moisture (76.96–80.05%), protein (5.90–7.36%), fat (3.55–4.38%), and fibre (2.10–2.88%) contents. Anti-oxidants analysis revealed presence of flavonoids (0.22–0.59 mg/100L) while anti-nutrients contents; phytates (148.15–289.83 mg/100L), and oxalates (15.94–31.05 mg/100L). Physicochemical properties indicated acidic pH (3.78–4.98) and varying viscosity (415.00–840.50 mPa.s). Macro-element analysis showed presence of calcium, iron, potassium, and magnesium, Micro-elements (cadmium, nickel, lead) were detected at low levels. Sensory evaluation indicated the control sample had the highest overall acceptability (8.35/10). In conclusion, this study underscores the need for quality control measures in traditional "dage" production to enhance safety, nutritional value, and consumer acceptability

Keywords: *Soy beans beverages (Dage); Anti-nutrients; Anti-oxidants; Heavy metal; Physiochemical properties; Street–hawked*

Emerging Trends in Office Technology and Management

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Abstract

The evolving digital landscape has significantly reshaped office operations and management practices across organisations. This paper examines emerging trends in Office Technology and Management, with emphasis on automation, artificial intelligence applications, cloud computing, digital records management, remote work systems, and advanced communication technologies. These trends have transformed traditional office roles, improved workflow efficiency, enhanced decision-making, and redefined managerial responsibilities in contemporary organisations. Using a descriptive and analytical approach, the study explores how these technological advancements influence productivity, information management, and professional competencies required of office managers and administrative personnel. The paper also discusses challenges associated with these trends, including skills gaps, resistance to technological change, cybersecurity concerns, and infrastructural limitations, particularly in developing economies. It argues that successful integration of emerging office technologies requires strategic leadership, supportive organisational policies, and continuous professional development. The paper concludes that organisations that proactively adapt to emerging trends in office technology and management are more likely to achieve sustainable efficiency, improved service delivery, and long-term organisational competitiveness.

Keywords: *Office Technology, Office Management, Emerging Technologies, Digital Transformation, Automation, Administrative Practices, Organisational Efficiency*

Curriculum Innovation in Electrical/Electronic Education in Colleges of Education North-East: Integrating Emerging Technologies for Economic Development in Nigeria

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Abstract

This study will be examined curriculum innovation in Electrical/Electronic Education in Colleges of Education in Nigeria, with particular emphasis on the integration of emerging technologies to enhance economic development. Rapid technological advancement and increasing demand for skilled manpower in the electrical and electronic sector have exposed significant gaps in existing teacher education curricula. Many Colleges of Education in Nigeria still rely heavily on traditional teaching methods and outdated course contents, which do not adequately prepare graduates for the modern workplace or national development challenges. Integrating emerging technologies such as renewable energy systems, smart automation, digital electronics, and embedded systems into the curriculum is critical for producing competent graduates capable of contributing meaningfully to the Nigerian economy and economic development initiatives. The study will adopt a descriptive survey research design, targeting lecturers and instructors in Electrical/Electronic Technology departments across selected Colleges of Education North-East. A purposive sampling technique will be employed to select respondents with relevant expertise. Data will be collected using a structured questionnaire designed to assess the current level of curriculum innovation, the integration of emerging technologies, the perceived relevance of new competencies, and challenges faced in implementation. The instrument will be validated by experts in Federal college of Education (technical) and curriculum development, and reliability will be confirmed using Cronbach Alpha, yielding a coefficient of 0.85, indicating high reliability. Data will be analyzed using mean and standard deviation to answer research questions, while t-test statistics will be used to test hypotheses at a 0.05 level of significance. Findings will reveal integrating emerging technologies into Electrical/Electronic Education curricula significantly enhances students' practical skills, improves employability, and contributes to economic development. The study will also identify key curriculum areas that require modernization, including competency-based training, industry collaboration, laboratory equipment upgrades, and exposure to modern technologies. The results will indicate that there will be no significant difference between the opinions of lecturers and instructors regarding the need for curriculum innovation and the integration of emerging technologies. Despite the benefits, the study identified major constraints, including inadequate funding, insufficient laboratory facilities, lack of technical expertise, and poor infrastructure, which hinder effective curriculum implementation. Based on these findings, the study concluded that curriculum innovation is essential for equipping students with relevant technical skills to meet industry standards and economic development goals. The study will be recommending the National Commission for Colleges of Education should review and update Electrical/Electronic Education curricula, incorporating emerging technologies, while governments and institutions should provide modern facilities, staff training, and foster industry partnerships to ensure effective implementation.

Keywords: *Curriculum Innovation, Electrical/Electronic Education, Emerging Technologies, Economic Development, Technical Education, Colleges of Education*

Empowering Marginalized Communities Through AI Capacity Building: Challenges and Opportunities

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Abstract

Empowering marginalized communities through AI capacity building presents both challenges and opportunities in the pursuit of equitable technological advancement. This abstract delves into the multifaceted landscape of addressing disparities through AI education and skill development initiatives. Despite the transformative potential of AI, marginalized communities face barriers such as limited access to resources, cultural biases, and inadequate digital literacy. However, by strategically addressing these challenges, numerous opportunities emerge for fostering inclusion and driving sustainable development. This paper explores the complexities of navigating these challenges while leveraging opportunities to empower marginalized communities. Through a combination of case studies, best practices, and policy recommendations, it aims to provide insights for stakeholders seeking to effectively engage and uplift marginalized populations through AI capacity building efforts.

Keywords: *Empowering Marginalized, Communities, Empowering, Marginalized Communities*

Visual Diagnostic Techniques for Assessing Normality and Distribution Preservation: Implications for Large Language Models

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Abstract

Statistical analysis often depends on assumptions about data distribution. Hence, distributional assumptions continue to play an important role in statistical inference, uncertainty estimation, anomaly detection, and risk-sensitive decision systems. While modern Artificial Intelligence (AI) increasingly relies on transformer-based Large Language Models (LLMs), which do not explicitly assume Gaussian distributions, the structure of the underlying data distribution still affects model stability and reliability. This study examines whether traditional normality diagnostics remain useful in modern AI workflows through a structured visual evaluation approach. Twenty-seven real-world datasets from healthcare, telecommunications, finance, and environmental domains were examined. Missing values were handled using Predictive Mean Matching (PMM), chosen because it reduces the variance shrinkage often caused by mean imputation. From these datasets, eight that showed approximate Gaussian characteristics were selected for deeper distributional analysis. For each dataset, both the raw and imputed versions were compared using histograms with kernel density estimation, quartile-quartile (Q–Q) plots, and boxplots to evaluate variance preservation, tail behaviour, and quartile consistency. The results show that PMM largely preserves the overall distributional structure, with only minor shifts observed across datasets. Variance patterns and tail properties remained mostly intact after imputation. These findings indicate that preserving the original distribution is more important than enforcing strict normality when preparing data for downstream modeling. Within transformer architectures, optimization processes, layer normalization, and attention scaling can be influenced by the statistical properties of input data. As a result, distortions introduced during preprocessing may affect embedding calibration and uncertainty estimation. The study therefore suggests that normality testing still has value, not as a strict requirement for Gaussian data, but as a practical tool for monitoring and maintaining distributional stability in data pipelines that support both traditional statistical analysis and modern generative AI systems.

Keywords: *Artificial Intelligence, Large Language Models, Imputation, Reliability, Trustworthiness*

Access Control in Cloud Computing Using Attribute-Based Encryption and Smart Contracts

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Abstract

This paper proposes a decentralized and fine-grained access control framework for cloud environments by integrating Attribute-Based Encryption (ABE) with Ethereum smart contracts. The system allows data owners to encrypt sensitive files in the cloud based on user attributes (e.g., role, department, clearance level), while access policies are managed transparently through smart contracts. The blockchain ensures auditability and resistance to single-point failures often seen in centralized access control systems. A prototype is developed and tested on a private Ethereum network linked with AWS S3 buckets, demonstrating improved access policy enforcement, reduced administrative overhead, and resistance to privilege escalation attacks.

Keywords: *Access Control, Cloud Computing, Attribute-Based Encryption, Smart Contracts*

Methodological Trends in Sustainable Cement Composites: Reviewing Cocoa Pod Ash as Nano-Additive in Sawdust Ash Concrete Blends

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Abstract

This study systematically reviews recent advances in the application of natural nanoparticle additives in construction materials, with a particular focus on cocoa pod ash (CPA) incorporated into sawdust ash (SDA)-modified concrete. Using the PRISMA framework, relevant publications were retrieved from Scopus, Google Scholar, and other open-access databases, restricted to the years 2020–2025. The search keywords included Nano AND (Technology OR Material) AND Concrete. The review critically analysed experimental methodologies, material compositions, mix designs, and analytical tools employed in previous studies, identifying both methodological strengths and limitations. Results indicate that while synthetic nanoparticles such as nano-silica and carbon nanotubes dominate construction materials research, agro-waste-derived nanoparticles remain underutilised. Specifically, CPA has demonstrated promising pozzolanic properties when integrated into SDA-blended systems, thereby improving compressive strength, durability, and resistance to aggressive agents such as chlorides and sulfates. Nonetheless, knowledge gaps persist regarding long-term performance, optimisation of CPA–SDA ratios, and applicability in large-scale construction projects. This review underscores CPA's potential as a sustainable and low-cost alternative in green building, offering pathways to reduce cement dependency and environmental impact. Practical recommendations and future research directions are provided to advance sustainable construction practices through the development of natural nanoparticle innovations.

Keywords: *Nanoparticles; Cocoa Pod Ash; Sawdust Ash; Sustainable Construction; Building Materials*

Access to Quality Education as A Predictor of Youth Involvement in Crime in Nigeria

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Abstract

In Nigeria today, concerns about youth involvement in crime are growing, raising questions about the role of education in shaping behaviour and life choices. When young people are out of school or in poor ones, they become easy targets for crime. Therefore, this study examined whether access to quality education can predict youth involvement in crime in Nigeria. A descriptive survey design was used with a sample size of 250 youths selected from both urban and rural areas. Data were collected using a structured questionnaire which was validated by experts and had a reliability coefficient of 0.79. Data were analysed using descriptive statistics (mean and standard deviation) and inferential statistics (correlation and logistic regression analysis). Results showed quality education access strongly predicts lower crime involvement ($r = -0.56$, $p < 0.05$; $OR = 0.42$), explaining 48% of the variance. Rural youths faced higher risks without school facilities. The study concluded that improving access to quality education can help reduce youth involvement in crime and boosts resilience. Leaders and schools should increase investment in education and improve learning conditions for young people.

Keywords: *Quality Education, Youth, Crime, Access, Nigeria*

University Campus Landscaping in Nigeria: Reviewing Trends, Themes, and Implications for Sustainability and Well-Being

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Abstract

University campus landscapes serve as multifunctional spaces that shape ecological sustainability, human well-being, and institutional performance. Existing studies in Nigeria show that campus landscaping influences student well-being, academic performance, and public health, but research remains fragmented, largely cross-sectional, and focused on perception and aesthetics, leaving gaps in longitudinal, ecological, and policy-focused analyses. This study systematically examines the evolution, themes, and trends in Nigerian campus landscaping research using bibliometric mapping, keyword analysis, and a review of empirical studies from multiple universities. Key thematic clusters identified include sustainable development, landscape design, university campus systems, biodiversity and green space, and human activities. Findings reveal an increase in scholarly interest post-2010, emphasizing the link between environmental quality, design strategies, governance, and student experience. Emerging trends include climate adaptation, AI-assisted monitoring, and human-centred landscape interventions. The study identifies gaps in longitudinal assessment, biodiversity integration, and policy-driven planning, offering practical insights for university administrators, landscape architects, and urban planners. Recommendations highlight the adoption of mixed-methods approaches, GIS and sensor technologies, and sustainability-aligned governance to enhance ecological, educational, and social outcomes in Nigerian campuses.

Keywords: *Campus landscaping, Sustainability, Biodiversity, Human well-being, Nigerian universities, Green infrastructure, Landscape design.*

Nonlinear Dynamical Modeling of Governance and Security Interactions: Stability, Bifurcations, and Institutional Thresholds

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Abstract

This paper develops a nonlinear dynamical systems framework to formalize the structural interdependence between governance effectiveness, security stability, and economic performance in developing economies. Moving beyond descriptive or econometric approaches, the study demonstrates how mathematical modeling provides a rigorous analytical lens for understanding institutional fragility, insecurity persistence, and systemic reform dynamics. The model consists of three coupled first – order nonlinear differential equations incorporating saturation-limited mutual reinforcement and proportional institutional decay. This formulation captures the cyclical feedback mechanism linking economic capacity, governance quality, and security stability. Closed – form expressions for equilibrium states are derived, and their local stability properties are rigorously characterized using Jacobian linearization and the Routh – Hurwitz stability criterion. The analysis reveals that system behavior is governed by a composite reinforcement to decay ratio $\rho = \frac{\alpha\gamma\eta}{\beta\delta\theta}$, by deriving explicit analytical conditions for stability and regime transition, the study illustrates how nonlinear mathematical modeling can serve as a strategic tool for diagnosing fragility traps, identifying leverage points for reform, and designing coordinated institutional interventions. The framework provides a theoretically grounded foundation for using dynamical systems analysis to inform good governance strategies and long – term security stabilization policies.

Keywords: *Institutional dynamics, Policy – relevant system analysis, Security modeling, Stability bifurcation.*

Fractional-Cover Time-Series as an Early-Warning Tool for Desertification in Semi-Arid Nigeria

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Abstract

Semi-arid regions of Nigeria face accelerating land degradation and desertification, yet conventional monitoring methods often fail to detect early warning signals of ecosystem decline. This paper evaluates the use of multi-decadal fractional-cover time-series derived from Landsat imagery as a quantitative early-warning indicator of desertification in Zamfara State, Nigeria. Vegetation fractions generated via the CLASlite algorithm for eight epochs (1985–2020) were analyzed using trend, change-point, and acceleration detection models. An Early-Warning Desertification Index (EWDI) was developed by integrating long-term fractional-cover decline rate, inter-annual variability, and degradation persistence. Results reveal that over 48 % of the state exhibited sustained vegetation decline exceeding $0.5 \text{ \% yr}^{-1}$, with acceleration after 2000. Approximately 22 % of the area showed early-warning signals of irreversible degradation, predominantly in north-western and central LGAs. The EWDI correlated strongly ($r = 0.79$) with field-observed degradation and historical drought records, confirming its predictive utility. This fractional-cover-based approach offers a cost-effective early-warning framework for desertification monitoring and supports proactive land-management interventions in semi-arid West Africa.

Keywords: *Desertification, Fractional vegetation cover, CLASlite, Time-series, Zamfara State, Remote Sensing*

Digital Transformation, Governance Efficiency, and National Security: A Quantitative Assessment of Economic Development in Nigeria

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Abstract

This study quantitatively examines the relationship between digital transformation indicators (ICT contribution to GDP, broadband penetration, financial inclusion, and cybersecurity readiness), governance efficiency, national security performance, and economic development outcomes in Nigeria between 2024 and 2026. Using secondary data from national statistical publications and international digital indices, trend analysis and descriptive quantitative interpretation were applied. Findings indicate a positive association between broadband expansion, ICT sector growth, improved governance transparency, and enhanced national security coordination. However, infrastructural deficits, digital literacy gaps, and regulatory limitations remain critical constraints. The study concludes that strategic digital integration significantly enhances economic resilience and sustainable development.

Keywords: *Digital Transformation, Governance Efficiency and Economic Assessment*

Readiness of Pre-Service Teachers Towards Information and Communication Technology (ICT) Integration in Teaching at Federal Colleges of Educations in North-Eastern Nigeria

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Abstract

This paper investigates the readiness of pre-service teachers towards ICT integration in teaching at federal universities in the North-eastern Nigeria. A descriptive survey design was adopted for the study. The population of the study consist of 7885 pre-service teachers of Federal Universities in the North-eastern Nigeria. The sample size is 381 pre-service teachers selected across the Federal Universities in North-eastern Nigeria using a random sampling technique. Three Research Questions and Three hypothesis were generated and answered in the study. The instruments for data collection in this study was ICT Attitude, Access and Competency (ICT-AAC). The instrument was validated by four (4) experts who check the suitability and clarity of these items. The Cronbach Alfa reliability co-efficient was computed for the instrument (ICT-AAC) which yielded an internal consistency reliability index of 0.82, 0.88 and 0.73 for cluster A, B, and C respectively, with an overall reliability index of 0.89. The research questions were answered using descriptive statistics and Spearman's correlation coefficient using SPSS version 25. Findings of the study showed that most of the pre-service teachers have positive attitude towards ICT integration in teaching. It was also found that pre-service teachers have no Access to most of the ICT facilities. It was further confirmed that the pre-service teachers were Competent in manipulating ICT facilities. The study further indicated a significant relationship between pre-service teachers' Attitude, Accessibility and ICT Competency. Finally, a number of challenges that might hinder the integration of ICT facilities in teaching were found and recommendations proffered, which include; improvement of pre-service teachers' Access to ICT facilities such as projector, smart/interactive white boards and the software required for the effective use of the boards. This should be aimed at increasing their Competency of the newly acquired or available facilities and how to integrate them in teaching.

Keywords: *Pre-service Teachers, Readiness, Accessibility*

Prospects of Socio-Political Culture for Good Governance in Nigeria

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Abstract

The paper examined prospects of socio-political culture of good governance in Nigeria. The prospects of fostering a culture of good governance in Nigeria hold significant implications for the nation's development trajectory. The realization of a culture of good governance in Nigeria hinges on the collective will and determination of its people. Citizens, leaders, civil society organizations, and international partners all play crucial roles in driving this transformative agenda forward. As Nigeria works toward fostering a culture of good governance, it has the chance to shape its own narrative, harness its diverse strengths, and contribute to the sustainable development and prosperity of its people. In conclusion, while the journey may be arduous, the prospects for cultivating a culture of good governance in Nigeria are both necessary and achievable. Through a sustained commitment to transparency, accountability, and inclusivity, Nigeria can embark on a path toward a brighter and more equitable future. Therefore, curriculum planner should prioritize civic education programmes that inform citizens about their rights, responsibilities, and the importance of active participation in governance. An informed and engaged citizenry is essential for demanding transparency and accountability. Also, government should invest in building strong and independent institutions that can effectively carry out their mandates. This includes enhancing the capacity of the judiciary, electoral commissions, and anti-corruption agencies to ensure checks and balances in governance.

Keywords: *Culture, Fostering, Good governance, Prospects, Socio-political*

Nigeria's African Union Diplomatic Relations: An Examination of African Continental Free Trade Area on the Country's Socio-Economic Development

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Abstract

This paper examines Nigeria's diplomatic relations with the African Union (AU), focusing on the implications of the African Continental Free Trade Area (AfCFTA) for the country's socio-economic development. A qualitative method that uses consultation with relevant literature as a means of data gathering was adopted for the study. This was supported with author's observation. The paper analyzes Nigeria's engagement with AU policies, assessing how AfCFTA opportunities and challenges shape national development outcomes. Findings from the study reveal that Nigeria's implementation of the African Continental Free Trade Area (AfCFTA) presents several opportunities for economic growth and development which include; increase trade and investment, digital trade growth, regional value chains, simplify trade regime as well as job creation and poverty reduction. It further observed that for Nigeria to maximize these opportunities, the country must address challenges like; regulatory inconsistencies, limited digital literacy, limited product diversification, capacity constraints, competition risks, and infrastructure deficits among others. The paper concludes that there is need for strategic alignment of Nigeria's trade policies with AfCFTA goals to boost industrialization and job creation. It therefore recommends the following as part of the strategies to addressing those challenges; infrastructure investment, export diversification, policy harmonization, private sector engagement, and digitalization among others.

Keywords: *Nigeria, African Union, Diplomatic Relations, African Continental Free Trade Area Socio-Economic Development*

Impact of Agricultural Education on Famers' Adoption of Sustainable Farming Practices: A Panacea for Food Security in Gombe Metropolis, Gombe State

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Abstract

The work assessed the “ impact of agricultural education on famers adoption of sustainable farming practices in Gombe metropolis, Gombe state” four (4) objectives guided the study. four (4) research questions were answered. The population of the study comprised of all registered maize farmers in the study area with a total of six thousand eight hundred (6800) farmers a sample size of 450 farmers'. were selected using random sampling technique, A structured Questionnaire was administered to farmers to gather information , mean and standard deviation were used for the analysis. The study showed a grand mean of 1.69 which indicates that agricultural education has low impact on farmers' adoption of crop rotation practice in Gombe metropolis, The study also showed a grand mean of 1.85 on a impact agricultural education on farmers' adoption of cover cropping practices in Gombe metropolis which equally implies low impact among others, based on the findings the study concluded that agricultural education has low impact on famers' adoption of crop rotation practices, conservation of tillage practice and agro-forestry among others therefore made the following recommendations among others: extension agents should gear efforts towards improving the impact of agricultural education on farmers adoption of crop rotation practices through seminars and workshops, ministry of education should organize a follow up visits to farmers to ensure that they utilize all the acquired knowledge appropriately especially on adoption of conservation of tillage.

Keywords: *Agricultural education, Adoption, sustainable farming practices and food security*

Entrepreneurial Knowledge of Binders on the Production of Efficient Rice Husk Briquette as an Alternative Renewable Fuel Energy Source in Nigeria

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Abstract

Rice husk, a by-product of rice milling, has long been used in rural and urban areas all over the world in developing nations for cooking and heating through direct combustion and like many developing nations, Nigeria faces challenges from man-made/anthropogenic emissions especially from fossil fuel use and inefficient biomass burning which contribute to climate change, air pollution, and deforestation. Direct burning has been and is still inefficient, produces excessive smoke, and contributes greatly to indoor air pollution. Researchers and local innovators began compressing rice husk into briquettes in an attempt to improve combustion efficiency and transform it into a cleaner, renewable fuel thus, reducing harmful emissions as its (rice husk) briquette production offers a sustainable alternative to fossil fuels aimed at reducing greenhouse gas emissions while providing affordable energy for households and industries. Briquettes made from rice husk are often brittle and fragile, breaking easily and burning unevenly. This study attempted to improve strength and combustion quality of the briquette by using different types of binders so as to produce effective and efficient RH as a sustainable alternative renewable fuel. Four sets of solid fuel briquettes were produced from rice husk using paper mash, clay, corn starch and cassava starch as binders which can all be cheaply obtained locally. The briquetting was carried out mechanically using locally fabricated briquetting machines. Two different designs of briquetting stoves were also produced for the performance evaluation. Water boiling tests were carried out on the four briquettes. In all, cassava starch appears to be a more effective binder followed by corn starch, clay, and paper mash respectively. Results also showed that 1kg of rice husk-paper mash briquette and rice husk-clay briquette took 15 and 17 minutes respectively to boil 2 liters of water while 1kg rice husk-corn starch mash briquette took 12 minutes and 1kg rice husk- cassava starch mash briquette took less than 9 minutes to boil 2 liters of water whereas it took 1.5kg of firewood 20 minutes to boil the same quantity of water, all in the same environment and temperature. Flame tests also showed a pale yellow to pale blue for rice husk-clay briquette and rice husk-paper mash briquette respectively with highest level of soot and ash residue while those of corn and cassava starches showed more of blue flame with traces of yellow colour and little or no soot and ash residue. These findings indicate the superiority of briquette over firewood or charcoal in terms of combustion characteristics, quantity and cost effectiveness respectively.

Keywords: *Biomass, Briquette, Agricultural wastes, Solid fuel, cooking Stove, alternative energy source.*

Shelter After the Surge: Adapting Architectural Strategies for Post-Flood Housing Recovery in Lokoja, Kogi State

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Abstract

Flooding remains a recurrent environmental hazard in Lokoja, Kogi State, owing to its location at the confluence of the Rivers Niger and Benue, with impacts intensified by rapid urban expansion, weak planning control, and encroachment into flood-prone areas. Although many low-lying zones are designated as high-risk under formal planning regulations, they continue to be occupied due to housing deficits and governance challenges. The September 2025 flash flood in Oworo ward exemplifies this vulnerability, displacing 576 persons and completely destroying 31 percent of houses according to the International Organization for Migration and Kogi State Emergency Management Agency. This study aims to adapt existing architectural strategies for post-flood housing recovery to the specific context of Lokoja. The problem lies in the disconnect between architectural strategies derived from global frameworks and the realities of informal, high-risk settlements in Lokoja. The significance of the study is in advancing a context-responsive approach that integrates architectural resilience with local conditions. The study adopts a qualitative design research methodology. Data is collected from IOM displacement reports, a systematic review of flood-resilient housing technologies, and comparative analysis of these technologies against local constraints in Lokoja. Findings indicate that while some flood-prone areas require long-term relocation, others necessitate in-situ adaptation. The study recommends a dual approach combining selective relocation with adaptation of specific resilient strategies. It concludes that effective post-flood housing recovery in Lokoja depends on a context-sensitive balance between risk avoidance and architectural adaptation to enhance long-term resilience, reduce displacement-driven insecurity, and inform local land-use governance.

Keywords: *Post-flood housing, Lokoja, Kogi State, transitional shelter, flood-resilient design, displacement*

Security Threats and Environmental Challenges Associated with Artisanal Gold Mining in Minna Metropolis, Niger State Nigeria

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Abstract

Artisanal gold mining has emerged as a significant livelihood activity in Minna Metropolis, Niger State, but its expansion has been accompanied by rising security concerns. This study analyzes the types, prevalence, and underlying drivers of security threats associated with artisanal gold mining in the region. Using a mixed-methods approach that combined field surveys, key informant interviews, and secondary data review, the research identified prevalent threats including armed conflicts over mining sites, theft of mineral resources, environmental disputes, and community clashes. Socio-economic factors such as poverty, unemployment, and weak institutional capacity were found to exacerbate these threats, creating conditions for criminal exploitation and social unrest. The study further examined the role of regulatory frameworks and law enforcement agencies, revealing gaps in enforcement, inadequate monitoring, and limited community engagement. While existing policies provide a foundation for resource governance, their implementation remains inconsistent, thereby undermining efforts to mitigate insecurity. Findings suggest that strengthening regulatory oversight, enhancing law enforcement presence, and promoting alternative livelihoods are critical to reducing security risks in artisanal mining communities. This research contributes to the discourse on resource-related security challenges in Nigeria and underscores the need for integrated policy interventions that balance economic opportunities with social stability.

Keywords: *Artisanal Gold Mining, Security threats, Illegal Mining, Water Pollution, Environmental Degradation*

Strategic Management Practices as a Driver of Organizational Performance: A Study of Bread Baking Firms

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Abstract

The competitive nature of the bakery industry requires firms to adopt structured strategic management practices in order to remain sustainable and profitable. This study investigated the effect of strategic management practices on organizational performance among bread baking firms. Guided by the Resource-Based View, Porter's Five Forces, and Dynamic Capabilities Theory, the study adopted a descriptive survey design. Data were collected from 120 managers and administrative staff across registered bread baking firms using a structured questionnaire, and analyzed with descriptive statistics, correlation, and multiple regression. The results showed that strategy formulation ($\beta = 0.31$, $p < 0.001$), strategy implementation ($\beta = 0.28$, $p < 0.01$), and environmental scanning ($\beta = 0.22$, $p < 0.05$) significantly enhanced organizational performance, while strategy evaluation had a positive but non-significant effect. Overall, the model explained 52% of the variance in performance ($R^2 = 0.52$). The findings suggest that bread baking firms can improve productivity, profitability, and competitiveness through effective strategic planning, robust implementation, and proactive environmental analysis. The study concludes that institutionalizing strategic management practices is critical for sustaining growth in the bakery sector and recommends that firms strengthen evaluation mechanisms to support long-term performance.

Keywords: *Bread Baking firms, Dynamic Capabilities, Organizational Performance, Resource-Based View, Strategic Management Practices*

The Role of Education, Capital and Human Development in Nigeria

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Abstract

Education is a pillar that uplifts the development of any individual or nation. Investment in education does not only leads to the so that social development and training of the minds of the individual and development of critical thinking but also indicates the values, skills, knowledge attitude that equip individuals to live in and contribute meaningfully to the society. The level to which a nation attains development depends on the quality of education provided. However, human capital is also needed to invest in education in order to achieve higher profits so as to bring effective social development to a given society. Education therefore is an instrument for social development which cannot be achieved without human capital. It is against this background that the paper examines the relevance of education to any human society. The paper also discussed the needs of human capacity without which educational objectives cannot in any way be achieved.

Keywords: *Education, Human Capital and Social Development, in Nigeria*

The Role of Effective Communication in Enhancing Food Processing and Packaging Systems in Nigeria

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Abstract

Effective communication is fundamental to the efficiency, safety, and sustainability of food processing and packaging systems. In Nigeria, persistent challenges such as food contamination, weak regulatory compliance, inadequate documentation, and low technological adoption have heightened the need for improved communication across the food value chain. This study examines the role of communication in enhancing food processing and packaging systems in Nigeria, focusing on information flow, staff training, regulatory compliance, packaging communication, and technology use. Adopting a descriptive qualitative approach based on secondary data, the paper reveals that effective communication significantly improves hygiene practices, quality control, packaging accuracy, consumer trust, and supply chain coordination. However, challenges such as low digital literacy, language barriers, and inconsistent regulatory communication persist. The study concludes that strengthening communication systems is critical to improving food safety, public health, and the competitiveness of Nigeria's food industry.

Keywords: *Communication, Food Processing, Food Packaging, Food Safety, Nigeria, Regulatory Compliance*

Ranking Functional Benefits of Shelter Belts in North-Western Nigeria Using Structural Equation Modeling Approach

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Abstract

Shelter belts, as linear plantings of trees and shrubs, are widely recognized for mitigating environmental degradation and supporting sustainable agricultural landscapes. This study evaluated the functional benefits of shelter belts in north-western Nigeria and ranked them according to stakeholder perceptions. A cross-sectional survey was conducted among 221 respondents across seven states, and data were screened for reliability and validity using Cronbach's alpha, Kaiser-Meyer-Olkin measure, and Bartlett's Test of Sphericity. Functional benefits were analyzed through standardised estimates and squared correlations (R^2), highlighting water conservation ($R^2 = 0.768$), biodiversity support ($R^2 = 0.749$), and erosion control ($R^2 = 0.683$) as the most significant. Wind reduction, aesthetic and recreational utility, and microclimate regulation followed in importance. The results indicate that shelter belts provide multifaceted benefits, including soil and water conservation, ecosystem services, and community well-being. These findings have practical implications for policymakers, farmers, urban planners, and environmental organizations in prioritizing shelter-belt interventions, integrating nature-based solutions into landscape planning, and promoting sustainable agricultural practices. The study also identifies gaps for further research, including longitudinal monitoring of ecological impacts and economic valuation of ecosystem services.

Keywords: *Shelter belts, Functional benefits, Water conservation, Biodiversity, Erosion control, Environmental management*

Integrating Maintenance Considerations in Design of Office Buildings: Insights from Kano, Tropical Nigeria

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Abstract

This study investigates the integration of maintenance design features in high-rise office buildings, focusing on a proposed office complex in Kano, Nigeria. It identifies a significant gap in architectural practice, where essential maintenance aspects—such as façade access, durable materials, climate responsiveness, and simple building forms—are often neglected during the design phase. Through literature review, case studies, and practical design analysis, the research reveals that architects tend to prioritise aesthetics and functionality over maintenance considerations, resulting in higher lifecycle costs and operational difficulties for facility managers. The findings support existing calls for maintenance-inclusive design strategies to improve building sustainability and user safety. The study recommends that policymakers and design professionals enforce maintenance integration during approvals and design processes, emphasising proper material choice, environmental adaptation, and access planning. It also highlights the need for standardised maintenance design frameworks and further research across diverse climates. This work contributes valuable insights to sustainable architecture and enhances the discourse on improving the maintainability of high-rise buildings.

Keywords: *Architectural Design Integration, Building Maintainability, High-Rise Office Buildings, Maintenance Design, Sustainable Building Practices*

Impact of Climate Change on Yam Production in Shiroro Local Government of Niger State, Nigeria

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Abstract

This study investigated the impact of climate on yam production in Shiroro Local government area of Niger State and adaptive strategies to achieve food production in the study area. There has been consistent increase in climate change and food security in the study area. Recurrent food crises has been occurred in the study area due to fast climate change. The variations in rainfall in the study area have a resultant effect on the production of yam. To analyze the relationship of rainfall and temperature on yam production in the study area. Data were source through the use of oral interview and personal observations on the activities of the farmers on their farms. Oral interview were conducted with a representative sample of the respondent were analyses with statistical technique. The secondary data for the study were study were also obtained from the Nigeria Metrological Agency Minna (NiMeT) and ministry of agriculture in order to understand crop and climate relationship for the period of 10 years (2015-2025) were analyzed using regression analysis. Based on the finding, the result shows that 2016 has the highest annual rainfall amount of 2478.5mm despite the highest rainfall total amount, yam production was not the highest within the year of the study. We recommended that introduce variety of yam for short growing season to enhance greater food production. As regard to this study, it is discovered that photosynthesis show the true picture of climate variation crop production.

Keywords: *Impact, Climate change, Yam production, Food security, Shiroro local government*

Effect of Self Efficacy on Students' Academic Performance in Nigerian Universities

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Abstract

Self-efficacy is a significant psychological construct that shapes students' beliefs about their capacity to organise and execute actions required to accomplish academic tasks. This study examines the effect of self-efficacy on students' academic performance in Nigerian universities. The study is premised on the view that students' beliefs about their academic capabilities influence their motivation, persistence, self-regulation, engagement, and ultimately their educational outcomes. Empirical evidence has generally established a positive association between academic self-efficacy and university students' academic performance, although the magnitude of this relationship varies across educational contexts. The study will adopt a correlational research design and obtain data from undergraduate students in selected Nigerian universities. A structured questionnaire will be used to measure students' academic self-efficacy, while academic performance will be assessed using appropriate indicators, such as Grade Point Average (GPA) or Cumulative Grade Point Average (CGPA). Data will be analysed using descriptive and inferential statistical techniques, including Pearson Product-Moment Correlation and regression analysis, to determine the nature and predictive effect of self-efficacy on academic performance. The study is expected to provide empirical evidence on the extent to which students' beliefs in their academic capabilities influence their educational outcomes within the Nigerian university context. This is particularly relevant because Nigerian evidence has reported a significant, although weak, positive relationship between academic self-efficacy and university students' performance. The study will contribute to educational psychology and higher-education research by providing evidence that can inform academic counselling, instructional practices, student-support programmes, and institutional interventions aimed at strengthening students' academic self-efficacy and improving academic outcomes.

Keywords: *Academic self-efficacy, Academic performance, University students, Educational psychology, Nigerian universities*

The Legal Framework for Intelligence-Led Policing in Nigeria: An Assessment of Institutional Powers and Accountability

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Abstract

The increasing complexity of crime and insecurity in Nigeria has necessitated a shift from predominantly reactive policing towards proactive, intelligence-driven and evidence-based approaches to crime prevention and law enforcement. Intelligence-led policing (ILP) has emerged as an important policing paradigm that emphasises the systematic collection, analysis, evaluation and dissemination of intelligence to inform strategic decision-making, resource allocation and operational effectiveness. However, the effectiveness and legitimacy of ILP depend not only on intelligence capabilities and technological resources but also on a coherent legal framework that clearly defines institutional powers, regulates intelligence-gathering practices and establishes effective accountability mechanisms. This study critically examines the legal framework governing intelligence-led policing in Nigeria, with particular emphasis on institutional powers, inter-agency intelligence sharing, surveillance, data processing, operational discretion, human-rights protection and institutional accountability. The study adopts a doctrinal and socio-legal research design, combining critical analysis of constitutional provisions, legislation, judicial decisions, subsidiary legislation, institutional regulations, policy documents, and relevant international and regional legal instruments with empirical perspectives from selected policing and security stakeholders. Particular attention is given to the constitutional framework governing policing, the Nigeria Police Act 2020, data-protection and privacy principles, criminal justice legislation and the statutory mandates of relevant law-enforcement and intelligence institutions. The study argues that although Nigeria possesses important statutory and institutional foundations for intelligence-led policing, significant legal and institutional gaps persist, particularly regarding clarity of institutional mandates, inter-agency coordination, oversight of intelligence practices, protection of privacy and fundamental rights, accountability for coercive powers, and regulation of emerging surveillance technologies. The study therefore evaluates whether the existing legal architecture provides an adequate basis for effective, lawful and accountable intelligence-led policing. It proposes legal and institutional reforms to strengthen oversight, clarify institutional responsibilities, facilitate lawful intelligence sharing, safeguard fundamental rights and reinforce adherence to the rule of law. The study contributes to scholarship and policy by advancing a rights-based and accountability-centred legal framework for intelligence-led policing in Nigeria.

Keywords: *Legal framework, Intelligence-led policing, Institutional powers, Accountability*

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