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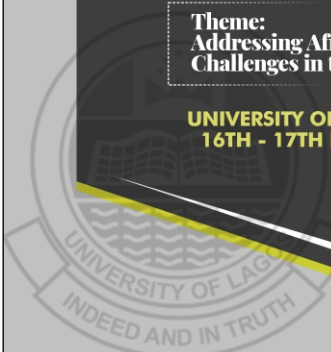


**International Conference on
AFRICAN DEVELOPMENT
STRATEGIES**

**ABSTRACTS &
PROCEEDINGS**

Theme:
Addressing Africa's Development
Challenges in the 21st Century

**UNIVERSITY OF LAGOS - NIGERIA
16TH - 17TH NOVEMBER, 2022**





INTERNATIONAL CONFERENCE ON AFRICAN DEVELOPMENT STRATEGIES

THEME

Addressing Africa's Development Challenges in the 21st Century

DATE: Wednesday 16th - Thursday 17th November, 2022

TIME: 10:00 am

CONFERENCE LOC

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DAY ONE – Wednesday 16th November, 2022

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Conference Registration	- 8:00am – 9:00am
Opening Prayer/Welcoming Remark	- 9:00am – 9:15am
Institutional Brief/Chairman's Opening Remark	- 9:15am – 9:30am
Research Training	- 9:30am – 12noon
Launch Break/Group Photograph	- 12noon – 1:00pm
Plenary Session	- 1:00pm – 4:00pm
Policy Review Session	- 4:00pm – 5:00pm

DAY TWO – Thursday 17 November, 2022

OPENING SESSION/PLENARY

Conference Registration	- 8:00am – 9:00am
Opening Prayer/Welcoming Remark	- 9:00am – 9:15am
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Launch Break/Group Photograph	- 12noon – 1:00pm
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Conference Abstracts

Assessment and Implication of Price of Engineering Project in Nigeria for National Development

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Abstract

The importance of providing adequate road networks linking rural areas with the city centres for the development of this nation, called for concerted efforts to provide quality data for its construction. The objective can only be achieved through proper survey observations to furnish engineers with the necessary survey data for geometric designs which serve as the framework for the construction of civil and building engineering project. Route Survey is usually conducted to capture spatial data for geometric design of roads. It provides data for the heighten, alignment, as well as for the setting out curves, culverts, bridges where necessary along communication routes such as road networks, railroads, canals, transmission lines, and pipelines. The proposed route starts from Yelwan Duguri to Birim village in Alkaleri Local Government Area of Bauchi State, covering a distance of habitants of both villages are mainly farmers and are in daring need of good roads, specifically this particular project if utilized, could facilitate the conveyance of their farm produces to the city centre. Sokkia SET 600 Total Station instruments was used to carry out the route survey along the proposed road to provide data on the existing Position and heights as well as the topographic features within the corridor for the plotting of the longitudinal profile of the road and subsequent Engineering design of the geometry of the road. Levelling was carried out along the proposed route at 20m interval to provide vertical controls for the alignment of the centre-line of the route and for the design of the longitudinal profile. Hydraulic structure such as culvert and concrete line drain were designed in this research for road construction. Engineering bill of quantity was also produced for appropriate costing of engineering work. This research work is recommended for used by the Bauchi state Government as well as the Federal Government of Nigeria.

Keywords: *Engineering bill, Quantity, Costing, Road network, Profile and cross section*

Brand Choice Influencing Factors and Customer Preference Level of Mobile Network Service Providers

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Abstract

As customers switch from one network to another, researchers argue over the propelling factors behind their switching behaviour. Most people in other zones of the country believe that an average Igbo man does not joke with money, to the extent that other factors are considered inconsequential. With this in view, one begins to wonder if tariff is the major factor that an average subscriber in the south east zone considers to switch brands. This work, therefore, examined brand choice influencing factors and customer preference level of mobile network service providers. Three hundred and ninety-one copies of questionnaire were administered on GSM users spread over the South Eastern parts of Nigeria to make possible the testing of three hypotheses formulated. Using SPSS, multiple regression was run to ascertain the effect of each of the independent variables: network quality, tariff level and complaint management on the dependent variable, customer brand preference level. Findings revealed that the three variables had significant relationships with customer brand preference. However, network quality made the highest contribution to Customer Preference Level, followed by tariff level and finally, complaint management, which made the least contribution. Since Network Quality made the greatest contribution to customer preference level, the researchers recommended that GSM service providers in Nigeria should creatively and innovatively apply the model developed by this work to enhance the quality of their service delivery.

Keywords: *Telecommunication, Network Quality, Complaint Management*

Design and Implementation of an Automatic Dual-Axis Solar Tracking System

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Abstract

As a result of the instability of power in the country and the rising demand for it, this work aims at designing and implementing an Automatic Dual-Axis Solar Tracking System, which will be able to enhance the performance of the solar panel in a solar energy system, by tracking the solar radiation maximally along with the movement of the sun. The system operates principally to keep the solar panels constantly aligned with the sunbeams, which maximizes the exposure of solar panels to the Sun's radiation which amounts to more power generation from solar panels. The work is composed of two main design divisions; hardware and software. The hardware design is comprised of mechanical parts and electrical/electronic components, while the software is concerned with programming the microcontroller unit of the Solar Tracker. ATmega328P microcontroller was the main controller used to control the motion of the motors, which are responsible for the rotation of the solar panel. The system utilized the light-dependent resistor (LDR) as the sensor and the rotation of the panels was determined by the microcontroller base on the outputs of the LDRs. The system has an additional advantage of having a wiper to clean the surface of the solar panel at intervals of time. Results obtained showed that the dual-axis solar tracking system has a better performance as compared to the fixed and single-axis solar trackers.

Keywords: *Dual-axis Solar Tracking, Photovoltaic, LDR, Arduino, Servo Motor*

An Exploration of the Gaps Between Constitution and Constitutionalism in Nigeria

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Abstract

This study explores and identifies the gaps which have hindered constitutionalism in Nigeria from independence to date as there contained in the constitutions, with particular emphasis to the 1999 constitution; and identify the other factors responsible for failure to achieve constitutionalism in Nigeria. The study used qualitative method to gather data from secondary sources and used historical documentation and qualitative method to analyse the data collected from journals, books, public and other documents. The study found that apart from imperfections contained in every constitution, the Nigerian politicians, elites and judicial officers are responsible for several constitutional gaps which hinder effective constitutionalism in Nigeria. Corruption, especially among the judicial officers and elites/politicians result in orchestration of gaps in order to achieve personal interests. This study is useful to the Nigerian state authorities in promulgating both popular and effective constitution as well as greater achievement of constitutionalism in Nigeria; it is also useful in establishing an orderly state and society with a stable and secured future for Nigeria and Nigerians. This study is unique in exploring and identifying issues in both orchestrated and erroneous gaps in the Nigerian constitutions. It is an expansion in the body literature on the Nigerian constitution and constitutionalism, especially at this critical time of searching for a viable constitution for Nigeria.

Keywords: *Constitution, Constitutionalism, Nigeria, Gap, Government, Judiciary.*

Privacy and Security in Social Network

Sam-Ekeke Doris Chisara

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Abstract

Social networks are a permanent presence in today's personal and professional lives of a huge segment of the population, with direct consequences of offline activities. Built on a foundation of trust, users connect to others with common interests or overlapping personal trajectories—online social networks and the associated applications extract an unprecedented volume of personal information. Unsurprisingly, serious privacy and security risks emerged, positioning themselves along two main types of attacks: attacks that exploit the implicit trust embedded in declared social relationships and attacks that harvest user's personal information for ill-intended use. This article provides an overview of the privacy and security issues that emerged so far in OSNs. We introduce a taxonomy of privacy and security attacks in OSNs, we overview existing solutions to mitigate those attacks and outline challenges still to overcome.

Keywords: *Privacy, Security, Social Network*

Nigeria's German Colonial Heritage: Historicizing the Uncelebrated 1961 Union of Nigeria and the United Nations Trusteeship Territory of British Northern Cameroon

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Abstract

Discussions on the geo-political structure of post-independence Nigeria is not complete without a recognition of the fact that Nigeria on 1st October 1960 was different from Nigeria of 1st June 1961. On 1st October 1960, Nigeria gained independence from the British and immediately relentlessly continued with campaigns for the United Nations Trusteeship Territory of Northern Cameroon to join Nigeria as a unique Province. Following the victory for Nigeria in the 11 February 1961 Plebiscite, that Territory gained independence and officially entered into a union with Nigeria on 1st June 1961. This was a union on terms that had been agreed upon by the two uniting entities under the supervision of the United Cr 15uu However, since the actualization of the union on 1st June 1961, there appears to have been an abandonment of the terms of the union as the Territory that had will lookingly joined Nigeria, lost its name, date of birth and geo-political contiguity. Drawing from oral accounts, archival sources and scholarly works, this paper seeks to go beyond asking questions to drawing attention to the neglected Nigeria's German colonial heritage. Specifically, the papers seek to bring to the fore the argument in support of the actualization of the 1961 Plebiscite agreements, giving the Territory and people their geo-political identity.

Keywords: *United Nations, Plebiscite, Province, Territory, Trusteeship.*

Nigeria's German Colonial Heritage: Historicizing the Uncelebrated 1961 Union of Nigeria and the United Nations Trusteeship Territory of British Northern Cameroon

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Abstract

Strength development of Portland cement concrete has been directly linked to the formation of ettringite and calcium silicate hydrates; formed during the hydration process. Several researches have established that this reaction (hydration) continues long after the concrete has hardened. Since this reaction occurs in the presence of water, it is important that the moisture content of cement paste (in concrete) is maintained at a desirable level through curing. There are several ways through which concrete can be cured. The effects of these curing methods on the compressive strength of Portland cement concrete have been well studied. However, little is known about how these methods affect the strength development of pozzolanic concrete. In this research, five different batches of pozzolanic concrete were prepared using each of the following pozzolanas: Groundnut shell ash (GSA), Coal bottom ash (CBA), Locust bean pod ash (LBPA), Wood ash (WA) and metakaolin. The performance of four curing methods (Ponding, sprinkling, covering with impermeable membrane and chemical curing) on each pozzolanic-concrete type was evaluated. Although the pozzolanas exhibit diverse properties, the performance evaluation of the curing methods shows a correlating trend with all concrete types. Chemical curing tops the list in strength development, followed by ponding, impermeable membrane coating and finally, sprinkling method. The compressive strength of each concrete type appears to be the same in the first 3 days of curing for all curing methods. However, beyond this period, a marked difference in compressive strength is observed, with concrete cured using chemical topping the chart, followed by ponding, impermeable membrane coating and finally, sprinkling method. Based on these results, pozzolanic concrete is best cured using chemical, followed by ponding, impermeable membrane coating and finally, sprinkling method.

Keywords: *Pozzolanic concrete; Curing; waste management; Compressive strength*

Evaluation of Micro-Nutrient Composition of Cocoyam (*Colocasia Esculenta*) Leaves: Marketing Perspective

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Abstract

Recently, food or nutritional and herbal supplements have become popular in the country, especially among the elites. Some of these supplements are so expensive that an average Nigerian may not afford them. Surprisingly, some researchers have noted the presence of micronutrients usually found in these supplements in some of our local crops that form our staple foods. One among such foods is cocoyam. Cocoyam is among the six most important root and tuber crops found in the world today. It is mostly grown in Africa notably, Nigeria, Ghana, and Cameroon. Regrettably, despite the high productivity levels and better storability compared to other tropical root and tuber crops as averred by most researchers, many have not explored the presence of phytochemicals and micro-nutrients in cocoyam, hence the need to evaluate the micro-nutrient composition of cocoyam leaves. This work, therefore, evaluated different varieties of fresh cocoyam leaves [*ede ofe* (NCE002), *cocoindia* (NCE001) and *ukpong/anampu* (NCE004)] obtained from National Root Crop Research Institute, Umudike, Abia State. A sample of 300g of cocoyam leaves were plucked, sorted, washed, spread on a mat and sun-dried for 3 days between 9am-6pm during the dry season. The dried cocoyam leaves (*mpoto*) were pulverized before storage with a locally fabricated machine and stored in various air-tight plastic containers and sent to the laboratory for determination of micro-nutrient composition. The micronutrient composition of samples was analyzed in triplicates using AOAC methods. Data were analyzed in replicates using one-way ANOVA. The result showed that the calcium, magnesium, potassium and phosphorus contents obtained from *anampu* were rated highest, while the lowest magnesium content was found in *edeofe*, which had the highest in iron, zinc, and carotene. It was also found that *cocoindia* had the highest composition of sodium, vitamins B1, B2, B3, C and E. To this end, the researchers recommended the aggressive marketing of all the sampled species to persuade people to leverage these micro-nutrients that are available in them, while harnessing the economic potentials of the root crop.

Keywords: *Micro-nutrients, Marketing, Supplements, Pulverize*

Evaluating the Performance of Activated Carbon (from Charcoal and Coconut Shell) in the Removal of Lead from Groundwater

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Abstract

Groundwater is the foremost source of water for domestic, agricultural and industrial purposes in several countries. In Nigeria it was observed that an estimated 60 percent of the population get drinking water from ground resources. Groundwater is subjected to pollution through rapid urbanization, mining, agriculture and industrial activities. The outbreak of acute Lead (Pb) poisoning among the rural dwellers of Zamfara State in north-west Nigeria, happened to be the worst heavy metals poisoning incident in recent time which resulted in the death of over 500 children within seven months. This study specifically evaluates the performance of activated carbon for lead remediation using slow sand filtration process. This design was based on preparing activated carbon from charcoal and coconut shell as an adsorbent medium for heavy metals such as lead through a slow sand filtration (SSF) process. The charcoal and coconut shell obtained were activated and prepared through a traditional steam activation process. The effect of temperature was studied by varying the sample temperature to 25, 30, 40 and 50°C. The result shows that adsorption increase with the increase in temperature. Likewise, the PH of the solution was varied to 9.0, 8.9, 5.0 and 3.0. By dissolving, sodium bicarbonate NaHCO_3 and Ammonium Chloride NH_4Cl basic salts, respectively, into the solution. The adsorption rate increase with increase in temperature. A PH of 5.0 was evaluated to be the best for the adsorption process. Physical, chemical and biological parameters of the samples were analyzed and the results show that a combination of locally produced activated charcoal and coconut shell was able to remove up to 75% of lead contaminants.

Keywords: *Activated Carbon, Charcoal and Coconut Shell, Groundwater*

Assessing the Effect of Banditry Activities On the Livelihood of Rural Communities in Shiroro Local Government Area of Niger State, Nigeria

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Abstract

The study was carried out to assess the effect of banditry activities on the livelihood of rural communities in Shiroro Local Government Area of Niger State, Nigeria. The objectives were to identify factors responsible for the upsurge of banditry activities, determine the effect of banditry on economic activities, ascertain type of crimes committed by the bandits and to identify methods that can be employed to curtail banditry. The purposive sampling was used to select the study area and simple random sampling technique was used to select eight wards out of fifteen wards in the local government, a total of 400 questionnaires were randomly administered. However, 373 questionnaires were retrieved. Findings revealed that crimes committed by bandits in the study area range from cattle rustling, kidnapping, rape, murder and looting of farm produce. The economic effect of banditry in the area led to impracticability of farming, trading and businesses activities, loss of livestock and limited natural resources. Factors responsible for the upsurge in banditry in the study area include; insecurity, abundance of weapons, vulnerability of areas, rural poverty, corruption, greed, political interference, land dispute. Finally, on ways to minimize challenges of banditry respondents suggested reporting of suspicious persons, intelligence gathering, tackle corruption, poverty reduction and increase security level. The study recommended that constant and effective deployment of adequate number of security personnel to the affected communities to checkmate the illegal activities of the rural bandits, government should set up effective modalities to retrieve/recover the unlawfully possessed fire arms from wrong hands and government to encourage dialogue and reconciliation among the different ethnic groups in the respective communities affected by the problem of rural banditry, Discrimination and marginalization should be addressed with ultimate sense of responsibilities and accountability.

Keywords: *Assessing, Banditry, Livelihood and Effect*

Assessing the Effects of Poor Drainage System on the Morphology of Some Selected Areas in Minna Metropolis

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Abstract

The study assessed the effect of poor drainage system on the morphology of some selected areas in Minna metropolis. The objectives were to assess and evaluate the spatial distribution of drainage network, examine the effect of poor drainage system on the residents and to assess the attitude of people towards drainage system. Descriptive survey was utilized with the application of a questionnaire as an instrument for the collection of data. Three hundred (300) questionnaires were randomly administered and 263 questionnaires were retrieved. Findings revealed that, on respondents' perception about poor drainage system in the area, the respondents have different view about poor drainage system ranging from poor quality of construction, lack of proper location of drainage installation, improper depth of drainage installations, inefficient planning and performance of measures to be the major causes of poor drainage system in the area. On availability of drainage system in the area, majority of the respondents have drainage within the surrounding however, only few stated lacks of drainage within the area. On effect of poor drainage network on the environment, in Barikin sale, 14.8% of the respondents explained that poor drainage resulted to flooding, 19.1% stated that it caused erosion, 25.5% revealed that it caused house collapse, 23.4% attributed it to blockage of road and 17.0% affirmed that it caused pollution. In Fadukpe 31.8% where for flooding, 13.6% erosion, 13.6% house collapse, 31.8% blockage of road and 9.0% pollution. In Sauka kahuta, 22.4% flooding, 16.3% erosion, 22.4% house collapse, 18.3% blockage of road and 18.2% pollution. Brighter area, 45.2% flooding, 38.8% erosion, 18.1% house collapse, 45.4% blockage of road and 4.7% pollution. Kafin tella 50.0% flooding of streets and houses, 14.2% erosion, 55.5% house collapse, 25.8% blockage of road and 55.5% pollution. Maitumbi 28.0% flooding, 35.7% erosion, 34.0% house collapse, 12.0% of the respondents revealed that it brought about blockage of road and 16.0% pollution. The study recommends improvement of drainage facilities through maintenance, redesign and reconstruction. Improving the role of poor workmanship in the construction of drainages and roads and provision of proper connection or integration between the road network and drainage network systems were required always when construction of roads and drainages were to take place. Drainages should be constructed by each resident across each home to reduce pressure on the general drainage and residents should avoid dumping of refuse into drainages.

Keywords: *Poor, Drainage, Metropolis, Morphology*

Climate Change Effect on Rainfall Pattern and Implications for Maize Production in Afikpo North Local Government Area of Ebonyi State, Nigeria

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Abstract

Climate change has impacted rainfall and its distribution. It has impacted also on human's livelihood and this calls for measures to help improve on the situation. The purpose of this study was to generate data/information on the current pattern and distribution of rainfall in Afikpo North Local Government Area (LGA) of Ebonyi State for the year, 2020. The study employed simple random and purposive sampling techniques. The LGA is made up of twelve (12) Autonomous Communities (ACs). Ten (10) ACs were randomly selected which represent about 80% of the total ACs. Field Assistants (FAs) were required for the field work and two (2) FAs were purposively selected from each of the 10ACs to give a total of 20 FAs who helped record relevant parameters. A self-designed recording instrument was used in the field work and data generated were analyzed using descriptive statistics. The result shows that the rain commenced early in the year and were not evenly distributed in the first four months of the year. The result also shows that much rainfall which was fairly distributed were experienced in the months of June, July and September. Recommendations, among others, are that farmers should be convinced to commence actual maize cultivation from the month of May and provide water through irrigation practices to make up during periods of water shortage.

Keywords: *Climate Change, Rainfall Pattern, Implications, Maize Cultivation*

Assessment of Relationship Between Trend of Registered Vehicles and Road Traffic Volume in Calabar Metropolis, Nigeria

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Abstract

This study aims at assessing the relationship between trends of registered vehicles and road traffic volume in Calabar metropolis, Nigeria. The following objectives were set to guide the study viz: to analyze the trend of registered vehicle (2012 – 2018), to assess the traffic volume and to identify the relationship between registered vehicles and the volume of traffic within the study area. Secondary data were obtained from the Cross River Bureau of statistics and internal revenue service while primary data were obtained from direct traffic count along the major road within the study area. Descriptive and inferential statistical tools were used in analyzing the obtained data. The result of time series graph showed that there was an upward trend of registered vehicles with private vehicles leading with 65.5%. The one week traffic count showed that Monday recorded the highest number of vehicles with 8424 vehicles while its lowest was on a Sunday with 6775 vehicles. The Pearson product moment correlation result showed that there was a strong and positive correlation between the trend of registered vehicle and the existing traffic volume within the study area. it was recommended that transportation infrastructure and other road furniture be expanded and regularly upgrade in order to match up with the increasing road volume and upward trend of registered vehicles.

Keywords: *Trend, Traffic volume, Registered vehicles, Correlation and Time series*

A Comparative Study of First Quarter of Year 2022 Road Traffic Crashes within the Geo-Political Locations in Nigeria

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Abstract

This research paper was aimed at analyzing the year 2022 first quarter road traffic crashes within the six geo-political locations in Nigeria. Objective of the study were: to determine the major causative factors responsible for road traffic crashes; to assess the influence of vehicle category on causative factors of road traffic crashes; to evaluate the degree of dependence of causative factors of road traffic crashes on the geo-political locations and to examine the level of spatial variations of road traffic crashes within the six geo-political locations. Secondary data were obtained from the federal road safety commission and National Bureau of statistics first quarter (Q1) of year 2022 Road Transport Data Report. These obtained data were subjected to both descriptive and inferential statistical analysis such as Chi-Square (X^2) and Analysis of Variance (ANOVA). The result shows that speed limit violation (59.79%), Wrongful Overtaking (6.77%) and Sign Light violation (5.67%) were the leading causative factors for road traffic crashes within the entire geo-political locations. The X^2 analysis revealed that road traffic crashes were influenced by the category of vehicle and also dependent on the geo-political locations with calculated value of 24,632 and 479.36 greater than ($>$) table Value of 27.59 and 107.52 respectively @ 0.05 significant level. Furthermore, the ANOVA result showed that road traffic crashes spatially varies within the geo-political locations with a calculated value of 2.48 $>$ table value of 2.28. It was recommended that more stringent measures be put in place by concerned authorities, agencies and stake holders towards incessant speed limit violation which was the leading causative factor responsible for road crashes.

Keywords: *Crashes, Traffic, Speed limit, Road and Locations*

Challenge of Seepage in Dam Using 2D Finite Element Method (Case Study of Dadin Kowa Dam, Gombe State, Nigeria)

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Abstract

Dams are vital elements in any contemporary society and have great economic values, but they also present a potential menace because their failure is usually disastrous. Thirty-five (35) percent of failure in embankment dams have been attributed to internal erosion and seepage. Filter drains within the dam help in checking these erosion and controls seepage flow. The Dadin Kowa dam was selected as a case study to analysis the seepage using Geo-slope SEEP/W a 2D finite element method-based software that can be used to model and determine seepage, provided the hydraulic conductivity and boundary conditions are adequately defined. Analysis was carried out at the maximum pool levels of three sections of the dam, STA 455, STA 450 and STA 425. Results showed that the annual seepage value at 50m maximum pool water level of STA 455 was 7726.32m³/year, the seepage value is less significant as compared to the reservoir capacity of 1.77 billion cubic meters. The flow velocity at 50m maximum pool water level obtained was 9.3504x10⁻⁷m/s. Where seepage is not checked and controlled in dams, the water within it will be high and water pressure are built around the core of the dam. This led to the failure of the dam and its outburst leads to collapse and settlement around the downstream area are affected which results to dead and destruction of properties. It is recommended that the core and filter drains be properly design with adequate materials to provided check on seepage in dams.

Keywords: *Earth Dam, Seepage, Filter drain, SEEP/W software and Analysis*

Influence of ICT in Education on Economy in Borno State, Nigeria

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Abstract

ICT as a revolution left no area of life untouched. ICTs play a vital role in educational institutions. It improves teaching and learning and contributes meaningfully to an economy. This paper was to examine the influence of ICT in Education in Borno state, Nigeria. In this regard, the study adopted questionnaire method for data collection, where 120 questionnaires were administered to teachers and students from randomly selected five secondary schools (24 to each school) and simple frequency count and charts in MS Excel were used to analyze the collected data from schools. The study found out that ICT's role is very vital in teaching and learning, as it provides quality education and helps in economic development. Also, the study further revealed that ICT facilities are not available in most of the school, most lecturers do not use ICT tools in class and students that do not have ICT knowledge and use ICT facilities interact poorly.

Keywords: *Education, ICT, Implementation, Influence, Learning*

Comparative Effectiveness of Mastery Learning and Cooperative Teaching Methods on Students' Academic Achievement and Retention in Early Childhood Education in Niger State College of Education, Minna

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Abstract

This study was to determine the comparative effectiveness of mastery learning and cooperative teaching methods on students' academic achievement and retention in early childhood education in Niger State College of Education, Minna. The study adopted quasi-experimental research design. This study was carried out in Niger State of the South-Eastern Zone of Nigeria. The population of the study comprised the entire 560 National Certificate Examination (NCE), Year II Early childhood education students in all the 12 Niger State College of Education, Minna in the 2018/2019 academic year. Purposive sampling technique was used to select four technical colleges based on the number of Early childhood education students (male and female), their age, availability of teaching facilities and professional qualified teachers. The instrument for data collection for the study was Early Childhood Education Achievement Test (BEAT) for measuring achievement and retention of Technical College Students in Early childhood education. The instrument was validated for its content and face validity by three experts, two in the department of technology education and one in measurement and evaluation, all from Nnamdi Azikiwe University, Awka. The reliability of the instrument was determined by administering BEAT to a trial group of intact class of 30 NCE II Early childhood education students of Federal Government College Kontagora, Niger State. Reliability co-efficient of the score was established using Kuder-Richardson 20 Formula which yielded a coefficient index of 0.87. Data for the study were collected using Early childhood education Achievement Test (BEAT) through the research assistants who were the regular Early childhood education teachers in the sampled schools. The test scores of the pre-test, post-test and delay post-test for the groups were collected and used in the analysis. Teachers of early childhood education should train, encourage and motivate students on how to apply meta-cognitive strategies in learning Early childhood education so as to improve their retention ability. Government and other stakeholders in technical colleges should sensitize technical education teachers on the efficacy of cooperative and mastery learning teaching method through conferences, seminars and workshops.

Keywords: *Comparative, Effectiveness, Mastery learning and Cooperative, Academic Achievement and Retention, Early Childhood*

Local Government Served as an Agent of Development

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Abstract

The study is focus on the roles of local government as an agent of development at the grassroots level. However, certain challenges often obstruct its administration from doing so, which has to do with political, social, cultural, economic and environmental nature and system of the country, coupled with the problems around these factors. Against this background therefore, the paper utilizes secondary data to analyse the concepts of local government and development, their relationship, as well as the challenges impeding local government from rendering developmental services and the way forward. The paper reveals that there is no confusion as far as the original functions of local government is concerned, especially that of grassroots accelerated development. However, local governments' operation is largely affected by the activities of higher governments, coupled with unfavorable relationships, as well as insufficient finance and high level of unskilled and less educated people. This makes them highly ineffective and inefficient over the years. Despite all these, the study recommends that local governments be retained subject to thorough reforms and reasonable autonomy, as well as sufficient empowerment.

Keywords: *Local Government, Local Government Administration, Development*

An Asymmetrical Approach to the Impact of Global Oil Price Volatility on the Nigerian Economy (1981-2021)

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Abstract

This study investigates the impact of global oil price volatility on economic growth in Nigeria between 1981 and 2021 using annual time series data. Non-linear autoregressive distributed lag (N-ARDL) techniques is employed to confirm the asymmetric cointegration behaviour of unstable global oil price on GDP growth. Evidences from the N-ARDL approach suggest long run cointegration and asymmetrical relationship between global oil price volatility and economic Specifically, negative changes in global oil price affects negatively the changes that occur in economic growth. It is therefore, recommended from the study that government need to harness all her oil export earnings and save same to cushion the effects of global oil price decline in the future. Also, these savings can be used as means of sustainability strategy through investment diversification in other sources of foreign exchange earnings.

Keywords: *Asymmetric, Economic Growth, Non-Linear ARDL, Oil Price Volatility*

The Application of Information Communication Technology in Enhancing Security Network

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Abstract

The application of I.C.T in enhancing security network is a major aspect of national development. It introduces a technical approach to cyber security network. This ensures the availability, integrity, confidentiality and non-repudiation of resources and services in network environment and relevant security technologies are explained, some electronic mail (e-mail) and electronic –commerce (e-commerce) risk issues are discussed and security solutions are given the important of technical security measures to decrease the number and impacts of cyber-attacks are presented. The need is identified for a complementary technical protocol and prevention of information risks, and towards improving the efficiency of security solutions.

Keywords: *Network security, Technical approach and Information risks*

Design and Development of 300W Power Amplifier System

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Abstract

This research work is a design and development of a 300W power amplifier system. Power amplifiers are basically used as public address system with the main aim of aiding the speaker in speech delivery. The system is designed to drive an 8-ohm speaker and comprised of the differential amplifier stage, driver stage and output stage. The system was designed, developed and tested and the results show that the amplifier maintains low distortion and noise. More improved electronic components are to be incorporated to improve the performance of the system.

Keywords: *Power Amplifier, Transistor Gain, Distortion, Noise*

Development of Pre-Primary School Education in Public Primary Schools in Niger State – Challenges and Recommendations

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Abstract

Before the official recognition of Pre-Primary Education in the National Policy of Education, pre-primary education was considered to be the foundation of Nigerian Educational System. Presently, pre-primary level of education is recognized in Nigeria National Policy on Education (FRN, 2012) as the basis of education in Nigeria. Qualitative pre-primary education had been proven to give wide range of opportunities to children, especially those from low socio-economic background. This article looked at how pre-primary schools in public schools in Niger State developed. In the course of the development, some challenges were faced, among the challenges identified in this study are inadequate professionally trained caregivers/teachers, lack of conducive learning environment and inadequate learning materials. It was also recommended in this study that in-service training should be organized for the available teachers, conducive learning environment should be set up in all public pre-primary schools.

Keywords: *Development, Pre-Primary School Education, Public Primary Schools*

Students Attitude to Mastery Learning Instructional Approach in Teaching Methods on their Achievement in Early Childhood Education in Niger State, Nigeria

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Abstract

This paper presents students' attitude to mastery learning instructional approach implementation in improving their achievement in early childhood education among Niger State College of Education Students' in Minna Metropolis. Mastery learning is an alternative method of teaching and learning that involves the student reaching a level of predetermined mastery on units of instruction before being allowed to progress to the next unit. The study adopted the action research type of the non-experimental design. The study population consisted of Niger State College of Education students in the state. The multistage sampling technique was used to select the samples of the study which comprised of all NCE II student's in school (37 students). Results of the study show that mastery learning strategy is effective in enhancing students' learning outcomes in early childhood education; students have a positive attitude towards the implementation of mastery learning strategy in teaching and learning early childhood education; the gender of students do impact on their achievement in the subject. It is recommended therefore, that early childhood education teachers should be encouraged to adopt mastery learning approach during instructions and that educational planners increase the numbers of periods allotted to early childhood education teaching and learning in schools as this would foster students' learning outcomes/mastery of the subject.

Keywords: *Mastery, Learning, Instructional, approach, Students', Early childhood education, Nigeria*

Effect of Audit Attributes on Financial Reporting Quality of Quoted Financial Firms in Nigeria

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Abstract

Information irregularities are reduced in companies through improved financial reports but many factors like delay in financial reporting tend to weaken stakeholders' ability to obtain relevant information for better supervision of managerial activities. This study examines the effect of audit attributes on financial reporting quality of quoted financial firms in Nigeria. The population of this study comprises of all the fifty-three (53) quoted financial firms in Nigeria while twenty-four (24) financial firms were used as the sample size. The hypotheses were tested using a robust random effect regression model after conducting some diagnostic tests. The study reveals that both audit tenure and audit committee independence have an insignificant effect on financial reporting lags of the selected financial firm listed in Nigeria. However, the study also reveals that audit committee size (ACZ) has a significant effect on financial reporting lag of the selected financial firms listed in Nigeria. The study recommends that the financial firms should reduce long audit tenure to encourage speed in the release of financial statements by the firms to enable the stakeholders to make timely investments decisions. Also, the financial firms should also maintain a balance of equal numbers of executive and non-executive directors in the audit committee to enhance the timely release of financial statements to the stakeholders to guide them in making their investments decisions in Nigeria. Finally, the financial firms should have a large audit committee size that is mainly constituted with people who are well experienced in the industry to enhance the timely release of financial statements to the stakeholders for effective decision making.

Keywords: *Audit Attributes; Financial Firms; Reporting Quality*

Indigenous Peoples of Biafra (IPOB) Monday-Sit-At-Home Order and Human Rights Violations in South-East Geo-Political Zone, Nigeria: A Systematic Review

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Abstract

The Indigenous People of Biafra is a separatist group that agitates for self-determination of their people. The group, sit-at-home protest was being observed weekly to demand the freedom of its incarcerated leader, Nnamdi Kanu who has been in the custody of the Department of State Services for months. Without doubt, there has been a spike in recent months in the waves of insecurity in many parts of the five states that made up the South East. This has been epitomised by the spate of killings, arson, and other forms of human right violation and criminal activities in the region. Although the 1999 constitution of the Federal Republic Nigeria clearly provided for certain rights that cannot be easily undermined such as the security, welfare of the people, right to freedom of movement, etc. However, the problem of IPOB declaration of indefinite Sit-At-Home every Monday from August 9, 2021 have fuelled the infringement on fundamental human rights of the citizens. The objective of this study is to review the Indigenous Peoples of Biafra Monday-Sit-At-Home Order and human rights violations in South-East Geo-Political Zone, Nigeria. Data for the study were drawn from direct observation and authentic secondary sources. The study identified that the police and other security/law enforcement agencies in the country seems not to have unravel the forces behind the wave of violent crimes, including murder and arson that have engulfed practically the five states in the South Eastern region of the country. It further recommended that the human rights of the people must be promoted and safeguarded with the view to ensuring that the peoples' live are secured.

Keywords: *Self-Determination; Sit-at-Home; Human Right; Insecurity; South-East*

Use of Ceramic Tiles as Partial Replacement of Coarse Aggregate in Concrete

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Abstract

Concrete is a composite material composed mainly of water aggregate and cement. Often, additives and reinforcements are included in the mixture to achieve the desired physical and mechanical properties of the finished material. This study is on the experimental investigation on the suitability of the use of broken tiles as partial replacement for crushed granite in concrete production. Control mixing ratio of 1:2:4 batched by weight with water – cement ratio of 0.55 was used. The percentage replacement varied from 0% to 40% at intervals of 10%. The slump test was used to assess the workability of the fresh concrete. The compressive strengths and densities of cured concrete cubes of sizes 100mm x 100mm x 100mm were evaluated at 7days, 14days and 28days. A total of 54 concrete cubes were cast and tested. Increase in the percentage replacement of coarse aggregate with broken tiles reduces workability, density and compressive strength. The compressive strength and density increased with days of curing. The compressive strength and density are maximum for concrete cubes with 100% coarse aggregate and minimum when broken tiles content is 40% with equivalent strength of 23.5N/mm² and 20.3N/mm² and density of 2622 and 2441 kg/m³ respectively. Compressive strength tests showed that variation up-to 40% of the broken tiles in replacement for crushed granite was quite satisfactory with no compromise in compressive strength requirements 20N/mm².

Keywords: *Ceramic Tiles, Partial Replacement, Coarse Aggregate, Concrete*

Influence of School Environment as Challenges the Academic Performance and Discipline Among Public Pre-Primary School Pupils in Niger State, Nigeria

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Abstract

This study was titled “influence of school environment as challenges to the academic performance and discipline among public pre-primary school pupils in Niger State, Nigeria”. The objectives were to assess the influence of school environment as challenges to the academic performance and discipline among public pre-primary school pupils. The study adopted descriptive survey. The population was 223 with sample size of 152 which was determined via research advisor's sampling table (2006). A multistage sampling technique was used to select the respondents. Self-designed structured items questionnaire was used. To determine reliability of the instrument, a pilot study was conducted on 20 respondents through a test re-test method and at interval of 14 days. The two results were correlated using Pearson Product Moment Correlation Coefficient (PPMC) and the result obtained was 0.92 which implies the instrument was reliable. The data were analysed through frequency, simple percentages and mean. The results were that most schools especially those I rural areas were not fenced, school environment is a determinant to the realisation of school goals as it negatively affects academic performance and discipline of public pre-primary school pupils in Niger State. It was therefore recommended that head teachers should collaborate with community through School-Based Management Committee (SBMC) and Parent-Teachers' Association (PTA) to fence and provide adequate conducive learning school environment as towards promoting positive academic performance and discipline among public pre-primary school pupils in Niger State.

Keywords: *Influence, School Environment, Challenges, Academic Performance and Discipline*

Functional Secondary Education in Nigeria Panacea for Effective Poverty Alleviation

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Abstract

This paper focused on functional secondary education as a bedrock of the socio-economic and political development of any nation. The success of any nation in major development problem such as poverty, unemployment, inequality, among others can be traced on their functional secondary education. The objective of this paper is to determine relationship between functional secondary education and poverty alleviation in Nigeria. One of the developmental problems in Nigeria is the increasing rate of poverty in the country. Despite various policies and strategies of government and other stakeholders in alleviating the poverty problems. Also the paper discussed concept and issues in education, concept of functional education, poverty alleviating through functional education, infrastructural support for functional secondary education, financial support, inspectoral support. The paper posits that effective and functional secondary education in Nigeria remains the most fundamental vehicle for the eradication of poverty. The paper therefore recommends among others a serious overhauling of the educational system and sector in the country to produce a total person with requisite skill, knowledge and value relevant to Nigeria society.

Keywords: *Functional Education, Poverty Alleviation and Sustainable Development*

Design and Construction of a Solar-Powered Weed Cutting Machine Using Arduino Board

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Abstract

Smart solar-powered weed-cutting machines are employed to save the time and energy expended by humans to remove weeds on the field or farms. This work focuses on designing and constructing a smart grass-cutting machine that will be able to detect and cut grasses as desired by the user, as the machine considers these grasses as obstacles. The movement or the route of the smart solar-powered weed-cutting machine is based on a route planning technique. Sensors are used to provide feedback to a smart solar-powered weed-cutting machine by detecting the obstacles on the route of the machine. Arduino UNO microcontroller is utilized as the microcontroller to enable the control of the machinist metropolis. Other essential compositions of the system include solar panels, batteries, DC motors, ultrasonic sensors, and blades. The DC motor is incorporated to provide the required torque that drives the blade to cut the grasses.

Keywords: *Ultrasonic sensor, Arduino, DC motor, Grass cutting*

Incorporating Basic Primary Education Curriculum into Qur'anic Education for Children for Sustainable Development in Bida, Niger State

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Abstract

The main purpose of this study is to incorporate universal basic education programme into the Qur'anic Education for children for sustainable development in Bida, Niger State. Survey research design was used for the study to investigate the opinion and perception of Qur'anic Education teachers and UBE teacher in Niger State. The population for this study is 95 from some selected schools while simple random sampling was used to select 80 teachers of Islamic Studies and 15 teachers of basic primary education schools. A structured questionnaire consisting of thirty-five (35) items divided into five parts was used to collect data to answer the research questions formulated to guide this study. Data collected for research questions were analyzed using means and standard deviation scores, while the hypotheses were tested with t-test at 0.05 level of significance. This instrument was validated by three experts and the Cronbach's Alpha method was used to establish their internal consistency. The result of the findings indicated that most of the elements and pre-vocational skills of universal basic education is to be integrated into the Qur'anic system of education for an age group of five years and above and it was also established that the environment is a facilitator of effective incorporation of UBE into Qur'anic education system for sustainable development. It was recommended that Qur'anic schools should be provided with ICT equipment and laboratory to lay sound basis for scientific and reflective thinking in children and efforts should be made by the government to equip Qur'anic schools with basic facilities like libraries and vocational centres to provide children with basic tools for further educational advancement, including preparation for trades and craft of the locality as proposed in the National Policy of Education (NPE).

Keywords: *Incorporating, Basic Primary Education, Curriculum, Qur'anic Education, Sustainable Development*

Influence of Palm Oil Fibre Ash on the Properties of Asphalt in the Road Construction Industry in Bauchi State Nigeria

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Abstract

Palm oil industry plays an essential role in Malaysia's economy recently. However, is also drive towards accommodating of waste such as empty fruit bunch, mesocarp fibre, Palm oil mill waste product and palm oil fibre ash. POFA is known as a material that demonstrate great potential to be utilized as filler in asphalt mixture. This study is geared towards examining the influence of palm oil fiber ash on the properties of Asphalt in the road construction industry in Bauchi State. Many researchers mainly used POFA in concrete material, and limited in pavement material. Therefore, in this study, the potential of POFA in asphalt properties was evaluated as a choice initiative to encourage waste recycling in road construction industry. The conventional pen bitumen 70/60 that was used as the virgin asphalt binder in this study was obtained from Abubakar Tafawa Balewa University Bauchi laboratory. Materials used were Coarse aggregate, Fine aggregates, Bitumen (binder) and so on. POFA was integrated as filler material passing 75mm into a mixture design ACW20 with varying amounts of 0% 2.5% 5% 7.5% and 10% by weight of total aggregate) and bitumen content 6.1% the specific gravity properties of each amount of POFA were assessed was used during marshall volumetric properties. These materials were then analyzed using the Marshall Stability test. The laboratory results showed that the asphalt mixture was improved with a certain amount of POFA and indicated that POFA has good potentiality as alternative filler material in the asphalt mixed.

Keywords: *Palm oil fiber ash, Asphalt, Waste, Filler, Road*

Youth Empowerment for Security and Human Capital Development: The Role of Counselling

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Abstract

The society is facing a lot of global crises. This crisis ranges from economic, political, social and religious aspect of our lives. This paper examines the youth empowerment for security and human capital development: the role of counseling. The concept of National security and the state of insecurity in Nigeria, the concept of human capital development, youth's empowerment for security and human capital development, counselling strategies for security and human capital developments. It is therefore recommended that; community empowerment efforts to poverty reduction and eradication should be based on common driven development in which the younger ones and also the adults would be involving in the decision making on matters affecting them for a sustainable development.

Keywords: *Security, Human capital development, Counselling, Empowerment*

Nigeria-China Relations and its Impact on Rail Transport Development in Nigeria's Fourth Republic

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Abstract

Nigeria-China relations date back to pre-independence. This study identified the impact of the Nigeria-China relation on rail transport development in Nigeria's fourth republic. The specific objective of the study is to identify major area(s) where the relationship has impacted on rail transport development. The study adopted the mixed method of data collection with primary data collected from structured interview of selected Key informants who are purposely chosen based on their knowledge and expertise in relevant f Federal Ministries and institutions concerned with foreign affairs and transportation. Focused Group Discussions (FGD) was also held with relevant stakeholders in Lagos and Abuja. Textbooks, Journals and periodicals served as sources of secondary data. Findings of the study revealed that by end of the 1990s, railway system in Nigeria has almost collapsed. However, through the relationship, railway services has resumed in Nigeria in 2019. Thus, the relationship has positive impact on rail transport development in Nigeria, even though a lot still needs to be done to achieve effective and efficient rail system. To achieve better results from the relationship in the railway sector, the following measures are recommended: Nigeria should formulate and implement articulate and consistent policy towards China through strengthening of the institutions and legal frameworks, Nigeria should adopt the Public Private Partnership (PPP) and Build, Operate and Transfer (BOT) funding models in place of loans and Nigeria should strengthen her economy through development of local industries using agricultural and other natural resources that are abundantly available in the country.

Keywords: *Nigeria-China, Inter State relations, Rail Transport, Impact*

Internally Displaced Persons Crisis, Refugees and Cross-Border Movements of Migrants in West Africa: Wither is States Responses in Solving the Challenges 2019-2022

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Abstract

West African States according with the reports are troubled with internally displaced persons, refugees and increasing cases of migrant's humanitarian crisis. Though there are issues displaced Migrants from West Africa to European Countries encounters but the challenges are limited supports from West African States in reducing these challenges. These challenges include armed conflicts, Islamic extremists, terrorism/insurgency, forced/internal displacements, military coups d'état, poor populations, unemployment, crude oil prices, irregular migration, human trafficking, climate change, Kidnapping, militancy, destabilization of host communities, limited resources, inadequate social services and the struggling between USA and Russia in the region. These States are Burkina Faso, Mali, Guinea Bissau, Chad, Ghana, Liberia, Niger, Nigeria, Cote d'Ivoire, Benin, Togo Senegal and Gambia. The major interest of this article is to highlight the challenges making the states in West Africa not to solve with the challenges and the prospects there in when implemented. West African States when follows and practiced in line with these persons facing with these challenges, will reduce their plight and increase the level of development in the region.

Keywords: *West African State Responses, Internally Displaced Persons Crisis, Refugees, Migrants crisis and Weakness of the States in West Africa*

Assessment of Rainfall Variability and its Impact on Yam Production in Bosso Local Government Area of Niger State, Nigeria

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Abstract

Despite the technological advancement in the global agricultural sector, unreliable rainfall still remains a major threat to agricultural development in Nigeria which is usually associated with significantly poor yield and high variability in crop production. The present study aims at assessing rainfall variability and its influence on Yam production in Bosso LGA, Minna, Niger State. Secondary data were used for weather and yam production. Weather data were obtained from the Nigerian Meteorological Agency, Minna, (NIMET). Data for yam production was obtained from the Agricultural development program Minna (ADP.) The method of data analysis used to achieve the objectives, includes Coefficient of Variation (CV) was used to measure of relative variability patterns of rainfall, The Mann-Kendall test was deployed to assess the trend in yam production, The linear regression was employed having yam as the dependent variable and rainfall as the independent variable, this examine the relationship between rainfall and yam production. The result from the analysis between rainfall and yam production gave a positive correlation. From the research work it is therefore recommended that farmers should seek better advice on the weather requirement for each crop, also since rainfall is of great benefit in yam production, its cultivation should be programmed in a way that at the beginning of the rainy season, yam seedling should already be in the soil so as to obtain maximum produce.

Keywords: *Rainfall, variability, Yam, Bosso*

Assessment of the Implementation of Nigeria's National Food Hygiene and Safety Policy of National Agency for Food and Drug Administration and Control [NAFDAC]

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Abstract

The National Agency for Food and Drug Administration and Control (NAFDAC) is saddled with the responsibility of implementing the National Food Hygiene and Safety Policy but despite the existence of the agency, food-borne diseases remain a contentious problem in Nigeria. This study therefore attempts an assessment of the “Implementation of Nigeria's National Food Hygiene and Safety Policy of National Agency for Food and Drug Administration and Control [NAFDAC]”. The main objective of the study is to assess its barriers to the implementation of National Food Hygiene and Safety Policy of NAFDAC. The population of this study comprises of respondents from the NAFDAC staff and food vendors in the three (3) senatorial districts of Kogi state. The sample size is one hundred and forty-nine (149). The researcher also use questionnaire to collect data for this study. The data collected for the research work were mainly through primary and secondary sources. Tabular method of data presentation was used. The data was also analyzed using regression model and five-point Likert scale. The study found that corruption, lack sensitization and inadequate funding is a bane to the implementation of National food Hygiene and Safety Policy. The study concludes that implementation of the policy has been affected by corruption, lack of sensitization and inadequate funding. The study therefore, recommends among others that, government should strengthen the implementation of National Food Hygiene and Safety Policy and keep it updated and manage it effectively to impact more positively on food producers and vendors by engaging them on regular education/sensitization programmes in order to reduce the hazards of food contamination in Nigeria.

Keywords: *Assessment, Implementation, National Food Hygiene, Safety Policy*

Assessment and Implication of Price of Engineering Project in Nigeria for National Development

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Abstract

The importance of providing adequate road networks linking rural areas with the city centre's for the development of this nation, called for concerted efforts to provide quality data for its construction. The objective can only be achieved through proper survey observations to furnish engineers with the necessary survey data for geometric designs which serve as the framework for the construction of civil and building engineering project. Route Survey is usually conducted to capture spatial data for geometric design of roads. It provides data for the heighting, alignment, as well as for the setting out curves, culverts, bridges where necessary along communication routes such as road networks, railroads, canals, transmission lines, and pipelines. The proposed route starts from Yelwan Duguri to Birim village in Alkaleri Local Government Area of Bauchi State, covering a distance of habitants of both villages are mainly farmers and are in daring need of good roads, specifically this particular project if utilized, could facilitate the conveyance of their farm produces to the city centre. Sokkia SET 600 Total Station instruments was used to carry out the route survey along the proposed road to provide data on the existing Position and heights as well as the topographic features within the corridor for the plotting of the longitudinal profile of the road and subsequent Engineering design of the Geometry of the road. Levelling was carried out along the proposed route at 20m interval to provide vertical controls for the alignment of the centre-line of the route and for the design of the longitudinal profile. Hydraulic structure such as culvert and concrete line drain were designed in this research for road construction. Engineering bill of quantity was also produced for appropriate costing of engineering work. This research work is recommended for used by the Bauchi state Government as well as the Federal Government of Nigeria.

Keywords: *Engineering bill, Quantity, Costing, Road network, Profile and cross section*

Behind Failed Privatised Power and Energy in Nigeria

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Abstract

Electric power in Nigeria has been a major bane to economic diversification and growth. The country has an installed capacity of 12,522 MW, it only able to generate 4,000MW which is insufficient for the population of 200million people. By comparism, South Africa with a population of about 51million people, generate about 35,000MW out of an installed electricity generation capacity of over 52,000MW. With the state of power supply in Nigeria, many micro and medium enterprises. (MSMEs) as well as the industrial sector became crippled. In response, government embarked on privatization and deregulation of state-owned enterprises to inject private funds and operational efficiency through market forces. This article examines the privatisation of energy and power sector in Nigeria over the last two decades with a view to identify the challenges and to proffer lasting solution. A research approach integrating a literature survey and a case study carried out in Nigerian power and energy privatisation. Findings reveals unstable macro-economic environment as Nigerian currency continue to deprecate against the US dollars, dilapidated power infrastructure, huge debt of gas supplied, inadequate metering and estimated billing were identified as challenges. The author recommends public private partnership of the power sector in Nigeria.

Keywords: *Privatisation Power and Energy, Energy Generation*

RFID Based Security System with GSM Technology

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Abstract

This paper presents the design of a Radio Frequency Identification (RFID) Based Security System with GSM technology. The main advantage of this system is effective in mitigating the challenges of unauthorized intrusion into the secured places by sending SMS to the authority concerned. The RFID card data is scanned by the RFID reader and compared with registered users. If the data matches, SMS will be sent to the in charge where access can be granted or denied, if access granted the microcontroller turns ON the load through a relay that is switched by microcontroller output. An LCD display is used to show the name of the card holder else the "ACCESS DENIED" will be displayed. A buzzer is used to turn ON when an invalid RFID card is identified by the reader and SMS is also sent to the in charge for necessary action. The system is very effective compare to local locks due to the increase in criminal activities in our society and can reduce intrusion by 40% into the secured places. The system has applications in many areas like Industries, Companies, Offices, Shops, schools and our homes where only verified and granted people can have access.

Keywords: *RFID, GSM, Security, Microcontroller, LCD display*

Social Injustice and Distribution of COVID-19 Palliatives in South East Nigeria: Addressing the Quagmire

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Abstract

COVID-19 has caused tremendous havoc and pains in planet earth. This ranges from death of over 3.9 million people worldwide and 2,119 in Nigeria; morbidity of millions of people; deepening poverty; misery to pains associated with lockdown at various times. It was consequent upon these negative social conditions that governments, philanthropic organizations, corporate organizations and concerned individuals rolled out palliatives to soothe the pains experienced by citizens, especially the poor. Unfortunately, the distribution of the palliatives across Nigeria is replete with weak distribution template, exclusion, unfairness, misapplication, misappropriation and diversion, to the detriment of the needy. The objective of this study is to assess the various shades of social injustice observable in the distribution of COVID-19 palliatives in southeast, Nigeria. The specific objectives include; investigating the effectiveness of the template used in distributing the palliatives primarily meant for the poor and the vulnerable. The study will use a multi-dimensional approach which includes visits to sample communities in three out of the 5 states in southeast Nigeria. In all 60 out of the 604 communities will be visited. In addition, documentary secondary sources of data will be supplemented with Key Informants Interview (KII) in relevant Ministries with Town Union Presidents of the selected Communities will be used. Thematic descriptive analysis will be used to analyze the data and the findings will be discussed based on conflict theory which is the theoretical platform of the study. The pilot study conducted indicated that politics and inadequate data negatively affected the implementation of the distribution of palliatives to the disadvantage of the needy.

Keywords: *COVID-19 Pandemic, Social Injustice, Politics, Palliatives, Southeast.*

Investigation into Engineering Properties of Timber in Bauchi Building Material Market

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Abstract

Timber is one of the oldest known building material and its use have solved many structural and design problems in civil engineering construction works. This study was carried out to investigate the engineering properties of different types of timber present in building material market Bauchi. Samples of Gmelina, Tabo, Mahogany, Rimi, Taura, Dorawa, Ararrabi, Faru, Marke, Gamji, Bush Masonia and Doka. The parameters tested for are compressive strength, flexural strength, density and moisture content. At the end of the tests, Bush Masonia was found to be highest in compressive strength (38.61N/mm^2) and in flexure (84.4N/MM^2) while Tabo in moisture content (22%), Dorawa in density (990kg/m^3). The values obtained were used to classify the timber according to Eurocode and represented using bar chat for each parameter tested to show variation in the different species sampled. This will help to select a particular timber in terms of economy and to suit a specific purpose in the construction industry.

Keywords: *Investigation, Engineering Properties, Timber, Building Material Market*

The Role of French Language Education in Addressing Border and Security Challenges in the Sub-West African Region

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Abstract

Foreign languages enable one not only to acquire an in-depth knowledge of why the world is, where it is today and how national and transnational economic and political forces shape our lives, but also to negotiate our way in the global dimension. A linguist has it that, the need for linguistic professional competence has never been greater, in fact, it looms as a threat to a nation's security" Brecht, R.D.and Rivers (2000). Nations in the world today have understood the essence of studying more foreign languages to enhance their economic, political and security efficiency. As a country that is surrounded by francophone countries, Nigeria needs competent French language speakers within its security agencies, the military and all other sectors of public life for the purpose of efficiency in international Relations and security. The ability of the security personnel to receive, evaluate analyze and decode information and intelligence from foreign sources and to interact with their counterparts in a coalition setting, will go a long way in curbing threats of insecurity in the sub-West African region. The paper therefore seeks to examine the role that French language Education in Nigeria can play in cross border relations between Nigeria and her Francophone neighbors. It also seeks to propose ways and means of enhancing proficiency in the use of the French language by border and security agencies in the discharge of their responsibilities.

Keywords: *Role, French Language Education, Border and Security Challenges*

Assessment of the Implementation of Integrated Qur'anic Education in Niger State (2004 - 2019) Towards Addressing Nigeria's Development Challenges in the 21st Century

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Abstract

The study on assessment of the implementation of integrated Qur'anic education in Niger state (2004 - 2019) towards addressing Nigeria's development challenges in the 21st century was conducted to examine the level of implementation of Integrated Qur'anic Education programme and to identify the challenges facing the implementation of Integrated Qur'anic Education programme in Niger State (2004 - 2019). Two research questions guided the study. Survey design was adopted for the study. Questionnaire tagged Implementation of Integrated Qur'anic Education Questionnaire (IIQEQ) was used as a tool for collection of data. A total of 150 respondents formed the population of the study using purposive sampling technique, comprising 30 pupils, 30 teachers, 30 proprietors, 30 parents and 30 Ministry of Education (MOE) officials. The data collected was analyzed using frequencies and percentage for the demographic variables. The research questions were statistically analyzed using mean and standard deviation and valid judgments was made. Findings of the study revealed that; funding of the programme is inadequate, the learners (pupils) are not well fed on daily basis, the food given is not enough for them, it is not highly nutritive, supply and preparation of food to the learners is not regular, prompt and hygienic, infrastructural facilities like; medicines, uniforms, instructional materials for teaching Information and Communication Technology (ICT) among others which had influenced the successful implementation of the programme. Recommendations were made on the way forward towards the sustenance and success of IQE programme in Niger State and even beyond for Nigeria's development in the 21st century and beyond.

Keywords: *Integrated Qur'anic Education, Implementation, Tsangaya Education, State Universal Basic Education Board*

The Nature and Extent of Urban-Rural Interaction Between Minna and Selected Rural Settlement in Niger State, Nigeria

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Abstract

This study aims to investigate the increasing rate of interaction in terms of flow of people, goods and services between Minna, Garatu, Beji, Gwada and Tunga-mallam. The study assessed the nature and extent of interaction between Minna and the four rural settlements. A traffic survey of vehicles and volumes of passengers that moved between Minna and the four rural settlements on market and non-market days was carried out. Gravity model was used to calculate the relative strength of interaction of people between Minna and selected rural settlements. One hundred and fifty-six (156) respondents were sampled and administered a structured questionnaire. The result showed that there was a strong interaction between Minna and Garatu compared to other settlements (Beji, Gwada and Tunga-mallam) on market and non-market days. The data also showed that the rural settlements that specialized in providing low-order goods and services are significant market of agricultural products to neighbouring towns especially Minna and that the presence of a variety of agricultural products at cheaper prices in the rural markets encouraged urban-rural interaction. It was also confirmed that goods like agricultural products, clothes, petrol and other services like transport, labour, education were exchanged on the market and non-market days in the study area. Road accidents were the major problems that hindered the interaction. The research therefore recommends adequate support for agricultural production to minimize high cost of food in Minna and that road accidents cases should be properly checked to have smooth urban-rural interaction.

Keywords: *Urban-Rural, Gravity model, Traffic survey, Relative strength of interaction.*

Simultaneous Localization and Mapping in Autonomous Mobile Robots (SLAM)

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Abstract

In most industries, some workers are more hazardous to human handling. To this effect, the man began to think about how to get work done in a dangerous environment. The evolution of robots came because of this. A robot could be defined as a humanoid that can do work more accurately. The robot became the first machine that can interact with humans (Designer and Takahashi, 2007). Robots are used in different fields such as industrial automation. The increasing demand for a robot to perform tasks like rescue, surveillance, monitoring, and disinfecting Field hospitals is on the increase. For instance, the advent of the recent coronavirus proved largely the weak point in the medical sector globally. The advanced nations had to go through hard decisions due to the lack of medical supplies and personal protective equipment during the outbreak. Therefore, this paper will discuss SLAM and its importance in mobile robots.

Keywords: *SLAM, Robot, Dead reckoning, Navigation, Mapping*

Gender Involvement of Tuber Crops Farmers in Ogba/Egbema/Ndoni Local Government Area (Onelga) of Rivers State

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Abstract

The study investigated gender involvement of tuber crops farmers in Ogba/Egbema/Ndoni Local Government Area (ONELGA) of Rivers State. It seeks to identify types of tuber crops that are presently grown in the area; examine the gender differentials in the production of tuber crops and ascertain the reasons for gender differentials in tuber crops production in the area. Two hypotheses were devised to further direct the study. Descriptive survey design was employed and a total sample of 120 farmers made up of equal number of male and female from 12 communities were randomly selected for the study. The major analytical tools engaged were bar graph and weighted mean score derived from Likert rating scale, while Z-test was the inferential tool used to test the hypotheses at 0.05% significant level. The study identified in ranking order that cassava ($M=3.65$)^{R3}, sweet potato ($M=2.75$)^{R4}, yam ($M=2.50$)^{R3} and cocoyam ($M=2.35$)^{R2} are the dominant tuber crops grown in subsistence scales in ONELGA. It showed a mean difference of -1.99, -1.05, -1.03 for cassava, sweet potato and cocoyam respectively, in favour of women, while it showed a mean difference of 1.77 for yam production in favour of men. Finally, it shows in decreasing order of strength that the reasons for gender differentials in tuber crops productions in the area include that: the said – rich syndrome in the society has made most able bodied male farmers to abandon agriculture ($GM = 4.58$); yam production is strenuous, so female farmers prefer to grow cassava and cocoyam that are less strenuous ($GM = 4.53$); theft of tuber crops' products especially, yams from the farm by thieves discourages both men and women from tuber crop production ($GM = 4.48$); tuber crop farming is viewed as farming for lazy and poor people ($GM = 4.15$); and the capital intensive nature of yam production influences female involvement ($GM = 3.76$) among other variables. Test of significance indicates no significant difference in the views of both men and women as regards tuber crops production in the area. So, the study recommended that: A massive call to return to agriculture should be enforced to encourage tuber crops production in ONELGA; incentives should be given publicly to performing tuber crop farmers of the year in the area; and community policing should be engaged to discourage theft of tuber crops products from the farmers' farms.

Keywords: Gender, Involvement, Tuber Crops, Farmers, Production

Effect of Cooperative Learning on Students' Performance in Mathematical Based Topics in Economics Curriculum at SSS Level in Lagos State, Nigeria

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Abstract

Cooperative learning strategy is an effective instructional tool that can enhance the teaching and learning of Economics in Senior secondary schools. However, most Economics researchers, scholars and teachers are yet to be abreast with the use of this Cooperative learning strategy for teaching and learning of Economics. The study examined the effect of cooperative learning strategy on Economics students' academic achievement at the Senior Secondary School (SSS) level in Lagos State, Nigeria. Three research objectives and three research questions were raised and answered while two null hypotheses were generated and tested using t- test tool at 0.05 level of significance. The research designs employed in this study were descriptive survey and quasi-experimental; specifically, pertest, post-test, non-equivalent control group design. The stratified random sampling technique was used to select two hundred and forty (240) Senior Secondary two (SS2) students from six public senior secondary schools in two education districts of Lagos State, Nigeria. An instrument known as the Economics Achievement Test (EAT) with a reliability coefficient of 0.83 was adopted and duly validated by experts. Mean and standard deviation was used as a pre-test and a post-test to measure the achievement and to collect data easily. In the experimental groups, a cooperative learning strategy was used to answer the research questions, while simple regression and t-test analysis was used to test the hypotheses at a 0.05 level of significance. The results revealed that students taught using cooperative learning strategy perform better in the Economics Achievement Test than those taught using lecture methods of instruction. Thus, there was a significant effect in the use of cooperative learning strategy on the teaching and learning of Economics. Also, there was no interaction between methods, and gender on students' Economics Achievement Test. The study concluded that there is a need for the use of cooperative learning strategies for effective teaching and learning of Economics in order to improve the teaching effectiveness and academic performance of students at senior secondary schools. Based on these findings and conclusion, it was recommended amongst others that Economics teachers should be encouraged to use cooperative learning strategy as an effective learning strategy to teach Economics because it improves students' performance, enhances social interaction skills and fosters meta-cognition in students.

Keywords: *Cooperative Learning strategy, Lecture Methods, Economics Curriculum, Academic Achievement, Public, Senior Secondary Schools, Teaching Effectiveness*

Mathematical Models of Single Diode System of Solar PV For 24-Hour Surveillance Camera Application

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Abstract

The security challenge in Nigeria is so alarming due to the demand for regional governance, ethnicity, religion, etc. Many parts of the country have different regional movements like Boko Haram in the North, Biafra in the East, Arewa in the West, etc. which are demanding regional governance. Consequently, there is a need to have a 24hr camera for security monitoring and responses. The epileptic nature of the Nigerian power system cannot provide sustainable power to supply energy to these surveillance cameras. Therefore, an alternative energy source like solar energy should be used. Solar energy is quite abundant help. Solar energy cells for the generation of electricity is a built-in cell called modules. A module is an interface, which converts light energy into electrical energy. Modeling a PV module requires taking weather data (irradiance and temperature) as input variables. In this work, the characteristics to be investigated are the I-V and P-V characteristics using simulation and the MATLAB tool.

Keywords: *Current, Ideality factor, Irradiation, Single diode, Solar PV,*

Ideation of Sanitary Waste Disposal Facilities in Nigerian Built Environment

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Abstract

Concerned with protecting the safety, health and welfare of people engaged in work or employment Sanitary waste can be classified into Human hygiene (not infectious) such as pads, diapers, sanitary towels or napkins, tampons, condoms, incontinence sheets from a non-infectious source while Infectious waste comes from a person who is known to have an infectious or from a person who is receiving cytotoxic drugs. The impact is more pronounced because of the unorganized ways of municipal solid waste management and poor community collection, disposal, management and transportation networks in the cities and villages. The common day-to-day sanitary waste disposal has become an increasing problem in the Nigerian built environment which calls for implementing pragmatic solution. This paper therefore showcases an eye opener for all towards how sanitary waste are securely contained and identified before going into the waste management stream (deep burial, composting, pit burning and incineration), how it has fared and the necessary adjustments needed in the Nigerian built environment. The combination of historical and qualitative analyses will be used in assessing sanitary waste facilities to achieve safe and secured hygiene practices through a collective responsibility and sustainable waste management in Nigeria. To overcome this challenge there is the need to shift from unsafe to safe sanitary waste management with a more innovative and have suitable improved system, hand washing facilities, safe potable water and basic hygiene practices that would not only be cost-effective, environment-friendly and easy to construct but also would be acceptable to all people, especially the less privileged. It has been recommended that government and stakeholders should strictly enforce and implement the laws that will promote sanitary waste disposal and its management towards positive development in the Nigerian built environment towards a sustainable development.

Keywords: *Assessing, Development, Hygiene, Management, Sustainable*

Maintenance of Architectural Monument Site Towards Tourism Development - A Study of Baban Gwani Edifice, Kafin Madaki

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Abstract

The preservation of heritage, art and architecture is a cultural objective rigorously pursued by communities and nations wishing to promote their history, civilisation and aesthetic achievements. In Nigeria, the Federal Ministry of Tourism, Culture and National Orientation is the Ministry saddled with the entire responsibility of managing both tangible and non-tangible cultural and natural heritage with the National Commission for Museum and Monuments, more directly involved in this task. Historic features which have been declared monuments by the National Commission for Museum and monuments, include building of historical and architectural interest, ancient city walls and boundary mounds as well as cemeteries, etc. As a result, this work showcases the maintenance issues and challenges of Babban Gwani architecture and tourism at Kafin Madaki, Bauchi State as a monument site. This idea needs to be developed by the architect using 'maintenance'- an approach based on recent technological developments and scientific knowledge of construction methods, technology and materials that are applied to keep structures at good working conditions, periodically. The study area under investigation in Kafin Galadima, Bauchi state, further discusses issues of immense contribution to architecture and tourism development potentials by special attention in order to preserve, protect and promote our culture and tradition at Baban Gwani monument and tourist site. Hence, the contribution of this work can never be over stated as the results and findings were all relevant to professionals and other future possibilities in terms of attainment of tourism opportunities and potentials in Bauchi state and Nigeria in general. It has been recommended that government and stakeholders should strictly enforce the law that provides enabling environment and logistics for maintenance of Baban Gwani and other architectural monument sites in Bauchi and therefore, Nigeria.

Keywords: *Construction, History, Maintenance, Professionals, Scientific*

