

ABSTRACTS SUBMITTED AT THE 2ND ANNUAL MULTIDISCIPLINARY CONFERENCE OF THE AFRICAN SCIENCE FRONTIERS INITIATIVES, 26TH-28TH NOVEMBER 2024

Does researchers' age influence their involvement in plagiarism and data falsification in Africa?

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Objective: Research misconduct undermines the credibility and integrity of scientific research. While evidence abounds on research misconduct in developed countries, there is a paucity of data from Africa. This study assessed the frequency of plagiarism and data falsification in Africa and whether researchers' age influences their involvement in plagiarism and data falsification.

Methods: An online questionnaire, adapted from the Critical Analysis of the Scientific Misconduct Questionnaire—Revised, was distributed to African scholars, with 560 scholars participating. The survey measured the frequency of plagiarism and data falsification using a five-point ordinal scale: "never," "seldom," "occasionally," "frequently," and "don't know." Descriptive statistics and Pearson Chi-square test were used to analyze the data.

Results: Of the participants, 52.1% were males and majority were 40-49 years of age. Majority were from West Africa (55%) compared to participants from other regions. Around 51% of participants reported that they encounter plagiarism occasionally or frequently in their work environment, while 7% reported that they had been involved in plagiarism themselves. About 34% reported that they experience data falsification in their work environment occasionally or frequently, while only 7% mentioned that they had been involved in data falsification themselves. Reported experience of

plagiarism and data falsification in the work environment statistically significantly differed by age of respondents, but not reported own involvement with plagiarism and data falsification.

Conclusion: Over 50% of African scholars report that they experience plagiarism occasionally or frequently in their work environment, while a third report experiencing data falsification. Age was a significant determinant of the frequency of plagiarism and data falsification. The increased frequency of plagiarism and data falsification at the workplace calls for targeted interventions to foster ethical research practices, aiming to enhance transparency, accountability, and integrity in African research. *ASFI Research Journal*. 2025; S2(1): e12381.

Awareness of research misconduct among African scientists

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Objectives: Little is known about research misconduct among African researchers. This study assessed the level of awareness of research misconduct among African scientists.

Methods: This study is part of the African Science Frontiers Initiatives' Research Misconduct in Africa (RAMIFY) project. An online questionnaire, adapted from the Critical Analysis of the Scientific Misconduct Questionnaire-Revised, was distributed to African scholars between March and June 2024. We received

560 respondents. Simple descriptive statistics and Pearson Chi-square were used to analyse the data.

Results: Of the 560 respondents, 52.1% were males, the majority were from West Africa (55%), the majority (33.4%) were 40-49 years old, 45.7% were master's degree holders, 42.9% were doctoral degree holders, and the majority were from medicine and health sciences 39.3% compared to other disciplines. Half of the respondents (50.7%) needed to be made aware of research misconduct. In comparison, 20%, 23%, 3.8%, and 2.3% have been aware of one, 2-5, 6-10, and more than ten incidents of misconduct in their immediate environment during the past 5 years, respectively. The awareness significantly decreased for the past 12 months as nearly two-thirds (67.1%) had never been aware of research misconduct, while 16.8%, 12.3%, 2.6%, and 1.1% were aware of one, 2-5, 6-10, > ten incidents of misconduct in their immediate environment during the past 12 months, respectively. There were significant regional differences {Central Africa (22.5%), Eastern Africa (42.1%), Northern Africa (34.8%), Southern Africa (51.8%), Western Africa (59.7%) and Others (70%)}, but no significant differences in sex, age, and disciplines in never being aware of research misconduct in the immediate work environment during the last 5 years.

Conclusion: Awareness of research misconduct in the immediate work environment in Africa is low, with significant regional differences. No significant gender, age or discipline differences in research misconduct were observed. Further research is required to understand the reasons and implications of these results. *ASFI Research Journal. 2025; S2(1): e12382.*

Human Resource Management and Employee Retention at Ahmadu Bello University, Zaria

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Objective: Employee turnover in Nigerian tertiary institutions poses a daunting challenge among the institutions of higher learning which also affects

stability and productivity. The study aims to explore the salient HRM practices that influence retention and provide suggestions regarding how these practices can be improved to raise satisfaction levels concerning retention among good quality service delivery staff in the form of improvement.

Methods: - The design employed was a cross-sectional quantitative research study that examined the extent to which HRM practices affect employee retention at one point. The population for the survey comprises academic and administrative staff at Ahmadu Bello University Zaria. A sample of 300 employees was chosen using stratified random sampling.

Results: - The findings indicate that HRM practices such as career development opportunities and competitive compensation impact employee retention. The recommendations include that A.B.U. should enhance HRM practices by providing career development programs and offering competitive compensation tailored to meet employees' specific needs, which can significantly reduce turnover.

Conclusion: Effective HRM practices are vital for improving employee retention in A.B.U Zaria. *ASFI Research Journal. 2025; S2(1): e12383.*

The impact of fuel price on the cost of public transport in South Africa

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Objective: Fuel availability has long been recognized as an economic driver. It has covered several government fiscal shortfalls while facilitating worldwide movement for motorists and enterprises. The entire fuel price is determined by each nation's fuel pricing system. Public transport is becoming increasingly significant in South Africa's economy. The transport sector has made an essential impact on South Africa's economic growth by providing transport to millions of people who rely on public transport and manufacturing jobs. According to statistics, 80% of South Africa's population relies on public transport, with over 80,000 buses transporting 850 million people yearly. These buses are valued at

R25 billion, and the bus business employs around 30,000 people. This study examined the impact of fuel prices on the cost of public transport in South Africa, using time series data from 1994 to 2022. The analysis considers the direct correlation between fluctuating fuel costs and their subsequent effect on public transportation fares.

Method: The cointegration and long-term link between variables were investigated using cointegration tests using the ARDL bounds testing approach. The Error Correction Model was also used to determine the short-run relationship.

Results: The findings reveal that fuel price increases significantly contribute to higher operational costs, which are often passed on to consumers through fare hikes. This dynamic exacerbates the financial burden on lower-income populations who rely heavily on public transport. The study also discusses potential mitigation strategies, such as government subsidies and the adoption of alternative energy sources, to stabilize public transport costs.

Conclusion: The findings show that a long-term relationship exists between fuel prices and the cost of public transport in South Africa. Findings also show positive and significant impact of inflation, gross domestic product, and fuel prices on the cost of public transport. *ASFI Research Journal. 2025; S2(1): e12384.*

The impact of fuel price on supply chain costs in South Africa

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Objective: A supply chain is a system used by a business and its suppliers for the production and distribution of a particular good or service. Fuel price is an important component in the supply chain, which unfortunately can fluctuate widely. Fuel price volatility significantly affects supply chain costs, impacting the competitiveness and sustainability of business in South Africa. Hence, the logistics industry must often pay attention to fuel prices as they go hand in hand with

supply chain costs. This study examined the impact of fuel prices on supply chain costs in South Africa, exploring the effects on transportation, inventory and logistics management. This study uses a time series data from 1990 to 2022 and considers a direct correlation between fuel price fluctuations and their subsequent impact on supply chain costs.

Method: This study used the Autoregressive Distributed Lag Model (ARDL) to determine long term relationship between the variables. The Error Correction Model (ECM) was also used in the study to determine the short-term relationship between the variables.

Results: The findings reveal that fuel price has a positive long run impact on supply chain costs in South Africa. The findings indicate that fuel price increases significantly and contribute to rising supply chain costs, with disproportionate effects on companies and consumers.

Conclusion: The findings of the study show a positive long run correlation between fuel price and supply chain costs in South Africa. Moreover, the results demonstrate that real effective exchange rate has a positive long run impact on supply chain costs, while fuel consumption and inflation rate have a negative long run impact on supply chain costs in South Africa. *ASFI Research Journal. 2025; S2(1): e12385.*

Isolation and quantification of CD34+ cells from the cord blood of newborns in Tanzania

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Objective: This study aimed to evaluate the clinical and laboratory techniques for the collection, processing and quantification of CD34+ cells from umbilical cord blood in Tanzania.

Methods: This study included 44 CB samples from randomly selected, consented pregnant women at

Muhimbili National Hospital (MNH) and Aga Khan Hospital (AKH). Transportation time of the samples to the laboratory averaged 15 minutes. Screening for the sickle cell status was done using HemoTypeSCTM. Mononuclear cells (MNCs) were isolated by density gradient centrifugation using Ficoll-PaqueTM PLUS media and cells counting was done manually using a haemocytometer. Samples were tested for contamination using BacTec culture system and the MNCs were preserved with media containing 10% DMSO. Enrichment of CD34+ cells was done using CD34+ microbeads and FcR blocking reagent (Miltenyi biotech, Germany). BD® Stem Cell Enumeration kit (Catalog No. 344563, Miltenyi Biotec, Germany) was used for the enumeration of CD34+ and CD45+ cells. A single-platform flow cytometry assay was used to obtain the absolute count of enriched CD34+ cells.

Results: CB samples screened for Sickle cell status, 85.71% were AA and 14.29% were AS. 6 CB samples tested positive for contamination. The median volume of cord blood collected was 65 mL (IQR 43.75 – 77.5) and the median MNCs count per mL of cord blood was 2,500,000 (IQR 1,800,347 – 2,981,730.5). Viability of MNCs pre- and post-freezing was 95.30% and 64.23% respectively. MACS purification yielded 66.3% purity for fresh samples and 33.7% for frozen samples. Majority of enriched cells expressed the CD34 antigen alone (66.3%), a small proportion expressed both CD34 and CD45 markers (1.51%), and CD45 was expressed by 32.0%.

Conclusion: The study managed to establish a pipeline for the practice of cord blood collection and CD34+ cells quantification in Tanzania expanding the knowledge on the characteristics of CD34+ cells from African ethnicities. *ASFI Research Journal. 2025; S2(1): e12386.*

The Influence of Social Media as a Learning Tool on the Reading Culture of Students in Nigeria

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Objective: This study therefore, sought to assess the influence of social media platforms as a learning tool on the reading culture of students in three selected tertiary institutions in South Western region of Nigeria by determining the social media frequently used as a Learning tool, determine if the use of social media as a learning tool affect reading habits of students and the extent if it does, and also the level of reading culture among students outside their social media usage.

Methods: A quantitative approach was used for the study using survey research design. Structured questionnaire was used as instrument for data collection from the respondents drawn from the University of Ibadan (UI), Federal University, Oye-Ekiti (FUOYE) and Federal University of Technology, Akure (FUTA). The study adopted the purposive sampling techniques which involved only students that engage in social media platforms for learning amongst other things with sample size of 30. Out of the 30 copies of questionnaire administered, 30 copies were duly responded to and were found usable for the analysis.

Results: Results showed that respondents 21 (70%) prefers and uses YouTube compared with other social media platforms. A vast majority (70%) of the respondents rate the social media platforms as learning tools as effective compared to traditional learning resources while another 26.7% of the respondents rate the social media as very for effective learning.

Conclusion: The study therefore, concluded that students in the studied tertiary institutions in the South-west usually utilized social media for learning which is substituting for e-books and printed versions for study materials. *ASFI Research Journal. 2025; S2(1): e12387.*

Emotional intelligence, physical activity and perceived stress of university students in a lower middle-income country

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Objective: As university students navigate the challenges of academic life, it is important to understand how emotional intelligence, physical activity, and perceived stress interplay and impact their overall well-being. This research aimed to investigate the relationship between each pair of emotional intelligence, physical activity and perceived stress of undergraduates.

Methods: This cross-sectional study enlisted 373 participants across different departments from the colleges in a Nigerian university. Schutte self-report emotional intelligence questionnaire, Perceived stress scale and International Physical Activity Questionnaire were used to assess the participants' emotional intelligence, perceived stress and physical activity levels respectively. Descriptive statistics of mean, frequency, percentages, ranges, charts and graphs were used to summarize the socio-demographic data of participants. Inferential statistics of Pearson's correlation coefficient was used to determine the relationship among emotional intelligence, physical activity and perceived stress. Statistical package for Social Sciences version 21.0 with alpha level set at 0.05.

Results: Less than half (47.2%) of the students had high physical activity level. Most (79.6%) of the students had average emotional intelligence while 76.4% had moderate stress levels. There was no statistically significant relationship between emotional intelligence and physical activity (0.297) among undergraduates in this study and there was no statistically significant relationship between physical activity and perceived stress (0.107) among undergraduates in this study. However, there was a statistically significant relationship between emotional intelligence and stress coping mechanisms among undergraduates in this study.

Conclusion: This study highlighted that high levels of emotional intelligence and physical activity do not necessarily translate into effective stress coping strategies among university students. It is important for students to develop and maintain a healthy balance between these factors to support their overall well-being during their university years. *ASFI Research Journal. 2025; S2(1): e12388.*

Public health and economic impact of brucellosis among traditional cattle farmers in the western and southern provinces of Zambia

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Objective: The main aim of the study was to assess the public health and economic impact of brucellosis in Western and Southern provinces of Zambia

Methods: A cross-sectional study was carried out to determine the public health and economic impact of brucellosis among traditional cattle farmers in the Western and southern provinces of Zambia. Direct economic losses, public health and economic burden of brucellosis and the awareness of the one health approach among traditional cattle farmers were determined using a structured questionnaire and some focus group discussions. Descriptive statistics was used to analyse data using IBM-SPSS version 20 which was collected using a questionnaire and focus group discussions were analysed using Nvivo.

Results: The study revealed that the overall total economic losses incurred was ZMW 5, 852,000, equivalent to USD 223188.40 and the value of milk lost due to brucellosis was ZMW 75, 240, equivalent to USD 2869.5. The total number of workdays lost due to nursing patients and escorting patients to the medical facilities was 1450 work days, this information includes 33.1% of participants who lost workdays and 66.1% of participants who never took care of patients with chronic fever during the stipulated period.

The medical personnel and veterinary officers also admitted that having community engagement meetings with farmers/ communities and having active surveillance of zoonotic diseases can be some of the measures used to facilitate the one health approach in the control of brucellosis.

Conclusion: The One Health Approach must be employed and there should be collaboration among veterinary, medical and wildlife officers to combat brucellosis as a disease and also reduce reported cases. *ASFI Research Journal. 2025; S2(1): e12389.*

Unveiling Nature's Antidote: The Anti-Venom Potential of *Caralluma dalzielii* in Wistar rats Exposed to *Naja nigricollis* venom

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Objective: To evaluate the in vivo and in vitro neutralizing activity of the aqueous extract from the aerial parts of *Caralluma dalzielii* against snake venom.

Methods: In Vivo Study: 35 Wistar rats (70-180 g) were divided into 7 groups (n = 5). Group 1 received normal saline, while groups 2-6 received 1.26 mg/kg (LD75) snake venom intraperitoneally. Groups 2-5 were treated with 150, 250, and 500 mg/kg plant extract or 0.2 ml standard polyvalent anti-venom, respectively. Group 6 was untreated (negative control), and Group 7 received 500 mg/kg plant extract orally. Mortality was recorded after 24 hours, and survivors were treated for 7 days before haematological and biochemical evaluations.

In Vitro Study: Egg yolk mixtures (4 ml) in 7 test tubes were mixed with 0.5 ml snake venom solution (0.1 mg/ml). Aqueous extracts (100, 50, 25, 12.5, 6.25 mg/ml) were added to test tubes 1-5, standard anti-snake venom to test tube 6, and venom control to test tube 7. Mixtures were incubated at 37°C for 10 and 30 minutes. Percentage enzyme inhibition was calculated from the change in pH.

Results: The aqueous extract of *C. dalzielii* prevented mortality in all treated groups, comparable to the standard anti-venom. The extract showed immunostimulatory effects by increasing WBC levels compared to the venom control group. It prevented biochemical disturbances caused by *N. nigricollis*

venom, with a 500 mg/kg dose preventing liver enzyme elevation in envenomed rats. The extract at 100 mg/ml showed 64.29% enzyme inhibition against PLA2 in *N. nigricollis* venom, compared to 82.63% by the standard anti-venom. Enzyme inhibition by the extract was concentration-dependent.

Conclusions: Aqueous extracts of the aerial parts of *C. dalzielii* possess significant in vivo and in vitro anti-snake venom activity, indicating potential therapeutic use in treating snake bites. *ASFI Research Journal. 2025; S2(1): e12390.*

Exploring parenting styles and its influence on mental health among secondary school students in urban areas of Nsukka, Enugu State, Nigeria

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Objective: The study investigates the influence of different parenting styles on the mental health of secondary school students. Parenting styles play an important role in shaping adolescents' psychological well-being, impacting their emotional, social, and academic development. The research examines how each style influences factors such as self-esteem, resilience, anxiety, depression, and stress levels among secondary school students.

Methods: The study adopted the cross-sectional survey design, using a sample of 200 students from three schools in Nsukka Urban, data were collected through questionnaires that assessed students' perceptions of their parents' parenting styles categorized as authoritative, authoritarian, permissive, or neglectful and their mental health status. The data was analyzed using the version 20 Statistical Package for the Social Sciences (SPSS) to determine the relationship between each parenting style and specific mental health outcomes.

Results: The results revealed a significant positive association between authoritative parenting and higher self-esteem among students, while authoritarian and

neglectful styles were linked to increased anxiety and depression. The test also showed a significant relationship between age of the students and the type of parenting style they experience and no statistically significant relationship between level of education of the parents and the type of parenting style they use.

Conclusion: These findings suggest that parenting styles have a measurable impact on adolescent mental health, emphasizing the need for targeted interventions and educational programs to promote balanced parenting practices. The study concludes that fostering authoritative parenting may serve as a protective factor against mental health challenges, supporting students' emotional well-being and academic success. *ASFI Research Journal. 2025; S2(1): e12391.*

Race, ethnicity and multiple health outcomes: An umbrella review - research in progress

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Objective: The objective of this umbrella review is to synthesize existing global literature on the role of race and ethnicity in health and disease, with a focus on morbidity, mortality, and other intermediate health indicators. By pooling findings from systematic reviews and meta-analyses, this review aims to clarify the patterns and trends of racial and ethnic disparities in health and disease across diverse populations.

Methods: Comprehensive searches were implemented in the following databases for papers

published from inception to June 2024: PubMed, EMBASE, ISI Web of Science, CINAHL, Scopus, and Google Scholar. As an umbrella review, only systematic reviews and/or meta-analyses that address the research focus will be included. Pairs of independent reviewers are currently screening the identified papers for eligibility in the review. Data extraction will follow after the literature screening and will involve capturing information on study characteristics, exposures, comparators, and outcomes, which will also be done independently by at least two reviewers. Quality assessment will be conducted using the AMSTAR tool, and data synthesis will involve both narrative and quantitative methods, including meta-analysis and subgroup analyses.

Results: Our database searches identified 63,699 papers. After de-duplication, 33,681 papers are currently undergoing screening, first by titles and/or abstracts, and then by full texts. Plans are in place to develop the form for extracting data from eligible studies. The synthesised results will summarize the magnitude and strength of the association between race/ethnicity and different health outcomes.

Conclusion: This review synthesizes racial and ethnic health disparities, emphasizing targeted strategies to reduce inequities and guiding future research, practice, and policy. *ASFI Research Journal. 2025; S2(1): e12392.*

Suicide in Africa pre- and post-COVID-19 era: study in progress

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Objective: To determine the effect of COVID-19 on the prevalence of suicides in Africa.

Methods: A before – and - after study design will be adopted using data from the Demographic and Health Surveys (DHS). The DHS database will be accessed to identify data on suicides related surveys conducted in Africa within the DHS projects from January 1st, 2015, to September 2024. Data from years 2015 – 2019 will be considered as the pre-COVID-19 period while 2020 – 2023 will be considered as the post-COVID-19 period. Information to be collated will include countries, type of survey, survey period and design as well as related features on suicides drivers, prevention and intervention strategies. Data will be analysed using IBM SPSS 26.0 version.

Results: The expected primary outcome is to estimate the prevalence of suicides in Africa before and after the COVID-19 pandemic. This study will focus on countries with available data, including Angola, Burkina Faso, Cameroon, Congo Democratic Republic, Cote d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nigeria, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe.

Conclusion: The emergence of the novel coronavirus (SARS-CoV-2) in December 2019 and its eventual transitioning to a global pandemic (COVID-19) in March 2020 brought devastating effects on economic, societal and healthcare systems, both in developed and resource-low settings. Recent reports suggest a surge in post-traumatic stress disorders, including suicides, but there is scarcity of data from Africa on the post-pandemic effect on health and society. Therefore, the findings will bring a substantial contribution to the public health evidence-base in Africa on the immediate and long-term impact of the COVID-19 pandemic. It will also identify research gaps and best practices on the subject matter for policy consideration. *ASFI Research Journal. 2025; S2(1): e12393.*

Phytochemical screening, GC\MS analysis and evaluation of hypoglycemic effect of Adansonia Digitata fruit pulp using molecular docking analysis technique

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Objective: to assess phytochemical screening and GC/MS analysis for the presence of the secondary metabolites present in Adansonia Digitata fruit pulp and to evaluate their hypoglycemic effect using Molecular Docking technique.

Method: Adansonia Digitata fruit pulp was extracted, phytochemical and GC/MS screening was carried using the extract. Finally, the hypoglycemic effect of Adansonia Digitata fruit pulp constituents was evaluated using Molecular Docking technique using software programs.

Results: Phytochemical and GC/MS screening results revealed the presence of many of the secondary metabolites (flavonoids, saponins, coumarins) while the rest of metabolites were obtained from previous studies. Docking results showed that the substrate campesterol when bound to GLP_1 gave the highest binding energy among all substrates, the second one was stigmasterol substrate when bound to alpha amylase. Methyl palmitate had the lowest binding energy when bound with peroxisome proliferator activated receptor gamma and alpha glucosidase receptors and stearic acid when in its binding with alpha glucosidase receptor.

Conclusion: From docking analysis results campesterol and stigmasterol might be responsible for the hypoglycemic effect of Adansonia Digitata. *ASFI Research Journal. 2025; S2(1): e12394.*

Perception of workplace environment influencing research misconduct among African scientists

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Objective: Despite producing some of the best brains in various walks of life, it is disheartening to see Africa lagging behind in all indices of sustainable development goals which include scientific research. There seem to be an apathy for quality research by African scientist as we seem to always wait for breakthrough research by western scientists. Even in cases that Africa is worst hit, our research seems flawed with misconduct despite the investments in various research organizations and institutions. Hence, by looking at research misconduct at the workplace environment through Age, Gender, Region, and Academic discipline, this study aims to ascertain the perception of workplace environment influencing research misconduct among African Scientists.

Method: This study analysed data from the African Science Frontier Initiative online questionnaire, adapted from the Critical Analysis of the Scientific Misconduct Questionnaire—Revised, was distributed to African scholars between March and June 2024. It gathered responses from 560 African Scientists across Africa and beyond. The study assessed the perception of workplace environment influencing research misconduct among African scientists using a cross tabulation of (Age, Gender, Region, and Academic discipline) and the research questions along five level likert scale.

Results: There were a total of 560 participants of whom were 52.1% males, West Africa (55%), 33.4% were 40-49 years, 45.7% master's degree holders, 42.9% doctoral degree holders, and majority were from medicine and health sciences 39.3%, compared to other disciplines. The most common response to research misconduct at the work place across all levels of Age, Gender, Region and Academic discipline was to express disapproval to the researcher in Private, but not report them or probably do nothing.

Conclusion: The result above shows why research misconduct still thrives among African scientist because they are not made public, and we seem not to have laws encouraging people to report and shun research misconduct at the workplace environment. Therefore, policy guiding conduct of research in Africa and ethical principle in the conduct of research should be reinforced. *ASFI Research Journal. 2025; S2(1): e12395.*

Impact of different agro forestry systems on cocoa diseases among smallholder farmers in Bundibugyo District – Western Uganda

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Objective: The study aimed to evaluate how different Agroforestry systems' impact on cocoa diseases among smallholder farmers in Bundibugyo district

Methods: Data from four local administrative units in Bundibugyo were gathered. A cross-section design was used where purposive sampling was used to select 92 respondents. Individual interviews were conducted at household level using a questionnaire that was approved by the supervisor. In addition, photographs, data sheet and observation were employed to enrich the study.

Results: The study found no correlation between Black Pod disease and Cocoa Agroforestry systems. Witches' Broom and Frost Pod Root diseases showed significant influence, while Cocoa dieback was non-significant. Cocoa diseases were more common during the rainy season (72%), dry season (25.6%), and year-round disease incidence (7.3%). Disease impact significance on farms; medium shade system (90.2%), low shade system (8.5%).

Conclusion: Cocoa pests and diseases had a significant impact on the medium shade agroforestry system (shade diversity 2-3). Additionally, it was found that cocoa pod borer is a significant pest affecting cocoa farms while cocoa pod rot emerged a significant disease. *ASFI Research Journal. 2025; S2(1): e12396.*

Academic pressure and poor supervision and research misconduct among African scientists

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Objective: This study assessed the attitudes and beliefs of African scientists toward research misconduct.

Methods: We utilized a questionnaire adapted from the Scientific Misconduct Questionnaire-Revised (SMQ-R) to assess the attitudes and beliefs of African scientists. The online questionnaire was sent out to African scholars using various electronic media. Descriptive statistics and the Pearson Chi-square test were used to analyze the data.

Results: There were 560 respondents to the survey (males 52.1%; females 47.9%). Of the respondents, 93.9%, 93.6%, and 90.8% thought that pressure for promotion, pressure to publish, and poor supervision have some/strong influence on research misconduct in Africa, respectively. Only 3.6%, 3%, and 5.5% thought that pressure for promotion, pressure to publish, and poor supervision do not influence research misconduct in Africa, respectively. None of the gender, age, region, and academic disciplines significantly influenced scientists' perceptions of the contribution of pressure for promotion, pressure to publish, and poor supervision to research misconduct in Africa.

Conclusion: The majority of African scientists perceive that career promotion pressure, pressure to publish, and poor supervision strongly contribute to research misconduct in Africa. While promotion, academic publishing, and supervision are key indicators and requirements for career growth, institutions across the continent need to consider the amount of pressure put on scientists to fulfil these requirements in order to minimise their influence in cutting corners in research. *ASFI Research Journal. 2025; S2(1): e12397.*

Are hospital pharmacists ready for precision medicine in Nigerian healthcare? Insights from a multi-centre study

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Objective: Precision Medicine (PM) has taken center stage in healthcare since the completion of the genomic project. Developed countries have gradually integrated PM into mainstream patient management. However, Nigeria still grapples with wide acceptance, key translational research and implementation of PM. This study sought to explore the knowledge and attitude of PM among pharmacists as key stakeholders in the healthcare team.

Methods: A cross-sectional study was conducted in select tertiary hospitals across the country. A 21-item semi-structured questionnaire was administered by hybrid online and physical methods and the results analyzed with SPSS Version 25. Descriptive statistics were used to summarize the data. A chi-square test was employed to determine the association of knowledge of PM and the sociodemographic characteristics of the study population.

Results: A total of 167 hospital pharmacists participated in the study. A high proportion of the participants are familiar with artificial intelligence (91.75%), Pharmacogenomics (84.5%), and precision medicine (61%). Overall, 38.9% of the pharmacists had a good knowledge while 13.2% had a poor knowledge of PM and associated terms. The level of knowledge did not correlate significantly with gender ($X^2 = 3.21$, $p = 0.201$), age ($X^2 = 5$, $p = 0.27$), marital status ($X^2 = 3.21$, $p = 0.201$), and professional level ($X^2 = 6.85$, $p = 0.144$). The most important value of precision medicine to hospital pharmacists is the ability to minimize the impact of disease through preventive medicine (49%) while a large portion are pursuing and or actively

planning to pursue additional education in precision medicine.

Conclusion: There is a highly positive attitude toward the prospect of PM among hospital pharmacists in Nigeria. Education modules in this field are highly recommended as most do not have a holistic knowledge of terms used in PM. Also, more research aimed at translating PM knowledge into clinical practice is recommended. *ASFI Research Journal. 2025; S2(1): e12398.*

The impact of COVID-19 on hygiene practices in Africa: study in progress

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Objective: To evaluate the impact of the COVID-19 pandemic on hygiene practices in Africa.

Methods: A quasi-experimental before-and-after study design will be employed to compare data between pre-pandemic (2015-2019) and post-pandemic (2020-present) periods based on data from the Demographic and Health Surveys (DHS). Outcome variables will include the proportion of households with access to improved water sources and sanitation facilities, the availability of handwashing stations, and self-reported hygiene behaviors. The study will explore how the

COVID-19 pandemic may have led to changes in hygiene practices over time.

Results: The study is currently in the data collection and analysis phase. It is expected that the findings will provide comprehensive insights into the variations in hygiene behaviors and infrastructure improvements across different regions and communities. The results will help to determine the extent to which changes induced by the COVID-19 pandemic might have contributed to societal hygiene behaviors.

Conclusion: The study will offer a framework for assessing the long-term impact of COVID-19 on hygiene practices in Africa. The anticipated findings will inform future public health strategies aimed at sustaining improved hygiene practices and strengthening resilience against future health crises. Continued monitoring and evaluation will be necessary to ensure that the initial gains achieved during the pandemic are not lost. *ASFI Research Journal. 2025; S2(1): e12399.*

The impact of transportation costs on unemployment in South Africa

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Objective: Transportation costs play a significant role in shaping employment dynamics, particularly in developing countries like South Africa. This study investigates the impact of transportation expenses on unemployment rates within the South African context, highlighting how these costs influence job-seeking behavior and employment opportunities.

Methods: This study has adopted a restricted Vector Autoregressive (VAR) model also known as Vector Error Correction Model (VECM) which is effectively a time series analysis where all the variables in question will be treated as endogenous to establish the dynamic relationships among variables. The VECM has established the dynamic relationship between variables after testing and ensuring that the variables

are stationary and cointegrated which justifies the use of VECM.

Results: The findings reveal that high transportation costs are a major barrier to employment, particularly for low-income and marginalized populations. Increased transportation expenses not only limit individuals' ability to access job opportunities but also exacerbate existing inequalities in the labor market.

Conclusion: The study's findings emphasize the critical role of reducing transportation costs and improving job accessibility in mitigating unemployment and promoting inclusive economic growth. Lower transportation costs enable more people, especially those in distant or underserved areas, to seek and maintain employment, enhancing economic mobility and providing cost savings for families. Improved job accessibility ensures equitable access to employment opportunities, fosters business growth by diversifying the talent pool, and directly reduces unemployment rates. These measures could contribute to social inclusion, allowing broader participation in the economy, supporting sustainable development by reducing income inequality, and enhancing quality of life through better access to employment and increased economic security. *ASFI Research Journal. 2025; S2(1): e123100.*

Selected minerals and phytochemicals of three varieties of sesame (*sesamum indicum* L.) grown in a derived savanna

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Objective: This study evaluated selected minerals and phytochemicals of three selected varieties.

Methods: White Benue, Cameroon White, and E8 sesame varieties were grown in a derived savanna and the harvested seeds analysed for selected minerals and phytochemicals using standard assays.

Results: Mineral assessment showed White Benue's superiority in iron content at 4.46%, followed by E8

(4.45%) and Cameroon White (4.34%). Calcium was significantly highest in Cameroon White (0.68%), followed by E8 (0.65%) and lowest in White Benue (0.63%). Potassium was highest in E8 (1.17%), followed by Cameroon White (1.16%) and significantly lowest in White Benue (1.14%). Phosphorus was highest in E8 (0.53%), followed by Cameroon White (0.51%), and lowest in White Benue (0.49%). Selenium was significantly highest in E8 with a value of 2.04%, followed by Cameroon White with a value of 2.01% and low in White Benue with a value of 1.99%. Flavonoids was highest in White Benue (27.48%), followed by Cameroon White (10.98%) and lowest in E8 (10.86%), alkaloids had 5.89% across the cultivars, phytic acid ranged between 0.12% and 0.13%, but Cameroon White was the lowest (0.12%), E8 had the highest value of tannis (1.94%), followed by White Benue (1.93%) and lowest in Cameroon White (1.86%).

Conclusion: The nutritional values are unique to each cultivar and all cultivars evaluated have high amounts of important nutrients to contribute to diet and hence can be used as viable alternatives/complements to the wheat flour to foster food security. *ASFI Research Journal. 2025; S2(1): e123101.*

Forward vertical integration and competitiveness of firms in EPZ Kenya

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Objective: The main objective of the study was to determine the influence of forward vertical integration strategies on the competitiveness of firms in the Export Processing Zones (EPZ), Kenya.

Methods: This study used both quantitative and qualitative approaches. It also adopted the use of a questionnaire. Descriptive technique, specifically survey was applied in the research design. The target population was all the 137 EPZ firms within Kenya and the sample was drawn from this population. Further, the stratified random sampling technique was used. The quantitative data that was collected was analyzed

using the Statistical Package for Social Scientists. The significance level of each independent variable was tested against the dependent variable at 95% level of confidence using ANOVA, regression and correlation techniques.

Results: The results of this study indicated that forward vertical integration had a positive and statistically significant relationship with the competitiveness of firms in EPZ Kenya. at 0.183, $p < 0.05$ and 0.439, $p < 0.05$ when the moderating variable firm size is included.

Conclusion: This study concludes that the inclusion of forward vertical integration in the strategic plans of the different EPZ firms leads to increased competitiveness among firms. This will subsequently lead to an increase in revenue, employment opportunities, real-value added growth, and foreign direct investment (KNBS, 2022). *ASFI Research Journal. 2025; S2(1): e123102.*

Automating Typhoid prevention and management in Rwanda: Innovative Biosensor and Automatic Voice SMS (INNOBAS 1.0)

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Objective: The INNOBAS 1.0 project aimed to leverage innovative technologies to aid in the prevention and management of typhoid disease in Rwanda. The project had three primary objectives: to identify the current healthcare burden of typhoid in Rwanda, to appraise existing preventive and management measures, and to develop novel technological tools to enhance the effectiveness of typhoid prevention and management efforts.

Methods: A cross-sectional study design was utilized, gathering data from district authorities, hospital leaders, patients, and local communities across Rwanda's 30 districts. Two key technological interventions were developed: an integrated receptor-transducer biosensor device (the "biosensor cup") and an automatic voice messaging system. The biosensor

cup was designed to detect pathogens in water, providing a red signal if contamination was present and a green signal if the water was safe. The voice messaging system delivered prerecorded messages on typhoid prevention and management, ensuring accessibility for both literate and illiterate populations.

Results: The biosensor cup showed promise in improving water safety by alerting users to contaminated sources, thereby encouraging better water sanitation and hygiene practices. The automatic voice message system effectively reached a wide audience, enhancing public awareness and knowledge of typhoid prevention practices. Together, these innovations are anticipated to contribute to a reduction in typhoid incidence across the country.

Conclusion: The INNOBAS 1.0 project demonstrates the potential of emerging technologies to significantly enhance the prevention and management of typhoid in Rwanda. By reducing the incidence of typhoid and mitigating its socio-economic impacts, this project offers a scalable model that can be adapted to address similar public health challenges in other low-resource settings. *ASFI Research Journal. 2025; S2(1): e123103.*

A Critical Realist Perspective for Deconstructing Stagnation in Knowledge Innovation and Research, the Case of Walter Sisulu University in South Africa

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Objective: This paper focuses on the value of unleashing the potential in research, development and innovation (RDI) as a university function. In this paper, informed by such concerns about what can be the neoliberal sleight of hand in a university transformation, I will argue that, RDI is a necessary function as a structural arrangement. However, its fault lines can become more pronounced at the level of logical connections as a question of Agency.

Methods: In order to explain my argument and its related claims, I drew on the case of the typical 3rd

category universities in South Africa, whose history and social relations seem to defeat, at worst, or to frustrate, at better, the ideals of progressive and socially reconstructive and emancipatory projects where RDI is the means to an end. Methodologically, that then required the use of primary data from the range of the research practitioners, by means of questionnaires and focus group interviews, and triangulated with the use of organisational records.

Results: The study revealed the challenges of aggregated data which can constitute the actual shine about the RDI practices. For a kind of university education type that is categorised as comprehensive, digging deeper beyond the shine meant questioning the nature of the disintegrated systems of promoting and monitoring for research development and innovation.

Conclusion: The article concludes that, in a still disintegrated and skewed university education sector and its dialectical research terrain, unleashing research development and innovation must attend to the question of Agency, both about the structural arrangement and the logical connections. *ASFI Research Journal. 2025; S2(1): e123104.*

Technological preferences to ease caregiving burden in south-west Nigeria

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Objective: The burden of care suffered by informal caregivers poses a threat to various facets of their life and their quality of life. In westernized countries, technologies in form of digitalized health systems have been found to support caregiver needs. In Nigeria however, none of these technological interventions have been explored. In order to determine the best kind of technology to be employed by informal caregivers in Nigeria, it is important to determine which forms the Nigerian populace is interested in.

Methods: This study was a cross-sectional mixed method study design. The participants were informal caregivers of stroke survivors receiving out-patient physiotherapy services at select hospitals in South-

West, Nigeria. The Zarit Burden Interview was used to obtain data on participants' burden of care while a semi-structured interview guide was used to obtain their socio-demographic variables and their opinions on the forms of technology that could lessen their burden of care. Qualitative data obtained was analysed into themes while a test of association using the Chi square test was used to analyse the quantitative data obtained with alpha level set at 0.05.

Results: Most of the participants were female (68.3%), single (53.3%) and suffered moderate to severe burden of care (36.7%). Dressing, lifting and transfers were the most tasking activities the informal caregivers helped patients with. A majority of the respondents opined that their preferred technology to ease caregiver burden should be in form of web pages and mobile applications. The age and burden of care of respondents was shown to be statistically significant ($p=0.035$).

Conclusion: The participants experienced moderate to severe burden of care. Mobile applications and web pages were the preferred means of technological intervention to make caregiving easier. *ASFI Research Journal. 2025; S2(1): e123105.*

Enhancing stem education to accelerate innovation and economic growth across African countries

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Objective: This paper explores the role of Science, Technology, Engineering, and Mathematics (STEM) education in driving innovation and economic growth in African nations. It seeks to identify current challenges in STEM education, analyze successful case studies, and propose strategies for improvement.

Methods: The study employs a multi-faceted approach, including a review of existing literature on STEM education challenges and successes, analysis of case studies from various African countries with successful STEM initiatives, and an evaluation of strategies such as curriculum reforms, teacher

training, and industry partnerships. It also considers the impact of government policies and international collaborations on STEM education.

Results: The findings reveal that despite significant challenges such as limited resources, inadequate infrastructure, and a shortage of qualified educators, there are notable successes in several African nations where targeted STEM initiatives have led to technological and economic advancements. The study highlights effective strategies including curriculum reforms, enhanced teacher training, and strong partnerships between educational institutions and industry stakeholders.

Conclusion: Strengthening STEM education in Africa is essential for enhancing innovation capacity, fostering entrepreneurial activity, and promoting technological development, all of which are crucial for economic growth. The paper concludes with actionable recommendations for policymakers, educational leaders, and industry partners to collaboratively invest in and improve STEM education. Addressing existing barriers and implementing effective educational strategies can unlock Africa's potential for innovation and ensure sustainable economic development. *ASFI Research Journal. 2025; S2(1): e123106.*

Pd-l1 expression and its associations with irf-1, cd8+ t cells, and ki67 in primary subset of breast cancer: an in-silico and immunohistochemical validation

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Objective: This study aimed at validating the In-silico results on protein expression associations with PD-L1, IRF-1, Ki-67 and CD8+T lymphocyte infiltration in primary breast cancer.

Methods: One hundred and fifty breast tissues were collected from National Public Health Laboratory-Sudan. Samples were sliced and subjected to antigen/antibody detection using immunohistochemical technique using primary antibodies anti- PD-L1, anti-

IRF1, and anti-CD8, additionally, archived data on ER status, Ki67 scores and Lymph node involvement were extracted from records. In-Silico online web-based data tools (TIMER, ULCAN, TNMpolt, and GENT2), were early implemented to figure out correlations between protein/ gene expressions.

Results: Co-expressions of PD-L1 with IRF-1, Ki67 were found to be statistically linked ($P=0.032$, 0.014 , respectively), moreover, its expression seems to be CD8+ T cells dependent ($P= 0.10$). Unexpectedly, this study figured that PD-L1 expression is independent from nodal involvement with tumor cells.

ER receptor positive breast cases were found to be negatively correlated to PD-L1 expression pointing towards the assumptions that upregulation of Estrogen plays as agonist for PD-L1 upregulation.

Conclusion: We found that CD8 infiltration, IRF-1 and PD-L1 expressions are in consensus and could tell that CD8 and IRF1 act as triggers for PD-L1's. Neither ER nor Ki67 presented significant association to lymphocytic infiltrates. *ASFI Research Journal. 2025; S2(1): e123107.*

Investigating the education dilemma on its quality in a globalized environment for sub-Saharan Africa

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Objective: In an ever-evolving globalized world, national boundaries are blurring. Despite the growth of international education systems and funding by institutions such as the World Bank, the quality of the education sector based on outcomes to meet sustainable development goals (SDGs) in Sub-Saharan Africa is deficient. The study explores the quality of education and its challenges. It identifies strategies that support high-quality education and evaluates how well identified opportunities are applied in Sub-Saharan Africa (SSA).

Methods: The study employed a systematic review and AI ChartGBT to analyze the study variables. The study is based on goggle scholar journals and UNESCO Institute

for Statistics (UIS) data set. Education systems, curricula, globalized environment, education quality, and pedagogical approaches are the main search concepts. Time series analysis with a cross-sectional design is used and only data from 2008 to 2024 covering the study keywords is included.

Results: The education sector may be a victim to a highly digitalized global environment just like the financial sector. The control of education by institutions is at stake given the increasing digitalization and students' learning with the use of artificial intelligence (AI) and chatGBT. There is increasing influence of academic institutions through online studies without physical structures in economies where they have not been officially allowed. Institutions are having access to the students and teachers as instructors. This may be perceived as a threat to the traditional institutions. The increased use of AI has enabled learners to have access to knowledge all over the globe. However, in SSA, the learning has been challenged by the highly expensive required gadgets together with the poor internet infrastructure. There is need for government flexibility relating to education policies and commitment to support the use of Information Communication Technology (ICT) at subsidized costs to enhance learning in a globalized environment.

Conclusion: The failure to develop the right curricula and incorporate new technology in the education system due to human and financial resource constraints in SSA, leads to poor education quality and hinders the achievement of SDGs in a globalized environment. *ASFI Research Journal. 2025; S2(1): e123108.*

Community borders and security implications on Ogun State, Nigeria

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Objective: The hitherto robust border relations noticeable in the areas of primary production, manufacturing, construction, and commercial activities are threatened by the increasing prevalence of cross-border crimes, such as smuggling, human trafficking, and armed banditry posing significant security threats to the border communities of Ogun state in particular and Nigeria in general. This study assesses the security challenges of border communities on security in Ogun State, Nigeria.

Methods: A mixed-methods approach was employed, involving in-depth interviews with security personnel, residents, and government officials, alongside quantitative analysis of crime statistics from 2018 to 2023.

Results: Border communities have the characteristics of having the least levels of economic, transport, and social connectivity with other parts of the country which indicates continued neglect. The communities have some forest and a range of hills and mountains which have also contributed to incidents of crimes. The effects of this include disruption of commercial activities, social activities such as festivals, and school attendance and most people curtail their movement to reduce the risk of being victims of community border crimes. However, there are community vigilante groups to complement the government security agencies.

Conclusion: This research fills the critical gap in understanding the dynamics of the security situation in Nigeria. The findings reveal a significant correlation between border crime and increased insecurity. *ASFI Research Journal. 2025; S2(1): e123109.*

Under-5 children's illnesses before and after COVID-19 in Africa

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Objective: This study aims to evaluate the effect of COVID-19 pandemic on prevalence of different illnesses of under five children in Africa.

Methods: The study will use secondary data from the Demographic and Health Surveys (DHS) conducted across Africa between 2015 and 2023. An interrupted time series (ITS) design will be employed to assess changes in under-five health outcomes pre- (2015-2019) and post-COVID-19 (2021-2024). Health outcomes to consider will include the prevalence of diarrhea, respiratory infections, fever, and healthcare access metrics like vaccination rates and clinic visits. The COVID-19 pandemic is introduced as a dummy variable to mark the interruption in 2020.

Results: Countries with data on DHS and MIS before and after the outbreak of COVID-19 in 2020 have been identified. Relevant questionnaires are currently being reviewed and cleaned in preparation for analyses.

Conclusion: To better understand the impacts of outbreaks and pandemic on the overall health of children under five will help in designing evidence-based policies in African countries. Early preparedness for infectious diseases will reduce under-five deaths in the future. *ASFI Research Journal. 2025; S2(1): e123110.*

COVID-19 and domestic violence in Africa: study in progress

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Objective: The COVID-19 pandemic significantly influenced domestic violence globally, although data is lacking from Africa. Due to pre-existing socio-cultural norms and limited access to support services, Africa may face unique challenges regarding the impact of COVID-19 pandemic on domestic violence. This study aims to determine the effect of COVID-19 pandemic on domestic violence in Africa.

Methods: An interrupted time series study design will be employed using data from the Demographic and Health Surveys (DHS) to assess changes in rates of domestic violence before (2015-2019) and after (2021-2024) the pandemic. The study will include any African country with data for at least one year in both pre- and post-COVID-19 periods.

Conclusion: This research seeks to fill the critical gap in understanding the role of COVID-19 pandemic domestic violence in Africa. The findings will inform policies to strengthen prevention programs for future similar pandemics. *ASFI Research Journal. 2025; S2(1): e123111.*

Resource conflicts and challenges for conflicts management in north-central Nigeria

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Objective: The study investigates the Causes of Resources Conflicts in North Central Nigeria, analyse how proliferation of weapons, inadequate security framework and poor policing of volatile communities, politicization of resources conflict and mutual distrust constitute challenges for conflict management and Identify measure to end resources conflicts in North Central Nigeria.

Methods: The study adopted historical descriptive methods. This relies on secondary sources, which were drawn from textbook, journal, conference proceeding and Nigeria daily. The study adopted Relative Deprivation theory.

Results: The study finds that proliferation of arms, inadequate security framework and poor policing; politicising of resources conflict and mutual distrust affect conflict management in north central Nigeria.

Conclusion: The study recommends adopting robust judicial and legislative measures to manage conflicts associated with resources conflict in north central Nigeria. *ASFI Research Journal. 2025; S2(1): e123112.*

Advancing healthcare in Africa through interdisciplinary research and inter professional education and team-based care

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Objective: Study aimed to underscore the relevance of inter – professional collaboration in tackling current Africa health care challenges and improve health outcomes across the continent.

African continent is struggling with a complex interplay of infectious diseases, malnutrition, and Non – communicable diseases (NCDs), which significantly impacts the biological and social environments. The solutions require holistic, efficient and sustainable interdisciplinary research, IPE, and TBC implementation and improved patient outcomes.

Methods: The study employed an exploratory inquiry into interdisciplinary research insights, drawing from 23 experts from diverse fields to develop comprehensive strategies for limiting resource wastage in healthcare. Also carried out a historical review of incorporation of (IPE) and (TBC) into African health systems focusing on key periods (1960, 1970, and 2008) and tried to identify any barrier for enhanced patient team-based care and improved population health outcome.

Results: Several barriers to the implementation of TBC, such as limited resources, lack of knowledge about roles and scope of practice, high patient turnover, communication inefficiencies, language barriers, and professional jealousy. The IPE and TBC improves quality of life, satisfied patients and healthcare provider unlike lack of IPE and TBC that promotes unsatisfied clients, burnout of healthcare providers, failure to utilize the already limited resources and loss of lives. IPEC demand four main competency domains; first is value ethics for inter professional education, second is role and responsibilities, third is inter professional communication lastly teams and teamwork.

Conclusion: Interdisciplinary research, IPE, and TBC provides holistic, efficient, and sustainable health solutions through fostering collaboration across disciplines and professions, though Africa has been slow but will soon get there. *ASFI Research Journal. 2025; S2(1): e123113.*

Effect of COVID-19 on mosquito bed net use and malaria infection in Africa

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Objective: This study aims to investigate the impact of the COVID-19 pandemic on mosquito net usage and malaria infection rates in Africa.

Methods: Data will be extracted from the Demographic and Health Surveys (DHS) and Malaria Indicators Survey (MIS) databases, focusing on African countries with available pre-COVID-19 data (2015-2020) with 2020 as the pre-intervention year, and post-COVID-19 data (2021-2024) as post-intervention years. Countries that conducted DHS and/or MIS during these periods will be selected. Data analysis will include descriptive measures and multivariate analysis to interpret associations between dependent and independent factors.

Expected outcomes: The study aims to predict challenges of malaria control during pandemics, identify obstacles to ITN use, adapt malaria control strategies for urban and rural settings, inform health systems about the impact of COVID-19 on ITN usage and malaria infections, and facilitate effective interventions and preparedness for future pandemics. *ASFI Research Journal. 2025; S2(1): e123114.*

Effectiveness of school-based obesity interventions among secondary school children in Nigeria: systematic review

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Objective: School-based obesity interventions have been shown to have significant impact on the knowledge and behavior of adolescents regarding their lifestyle on a short-term, however, long-term impact of such programs and variations in methods and outcome measures make generalizability of studies somewhat problematic. This review aimed to identify and appraise

potentially relevant interventions for preventing adolescent overweight and obesity in Nigerian secondary schools.

Methods: The protocol was registered in PROSPERO (CRD42023402355). The review followed the PRISMA statement and the SWim guideline. We searched eight online databases to retrieve relevant studies. Only childhood overweight and obesity intervention studies in Nigeria were included in the review. Two reviewers independently screened the articles for inclusion, extracted data, and conducted quality appraisal of the included studies.

Results: From 799 screened records, only one study with 60 participants met the inclusion criteria. The study included school children between 6 and 12 years. School children from 9 – 10 years in the intervention group had a mean initial weight of 59.91kg and a mean final weight of 48.11kg after the exercise. The mean weight loss of the children was 11.80kg. Furthermore, school children from 11 – 12 years had a mean initial weight of 70.53kg and a mean final weight of 47.36kg after the intervention. The mean weight loss of the children was 23.16kg. Invariably, children between 11 and 12 years had a more significant weight loss compared to those between 9 and 10 years. However, these mean weight loss differences were not statistically significant ($p > 0.05$).

Conclusion: This review did not provide sufficient evidence of the most effective school-based obesity interventions. Although, school-based obesity interventions may be effective, there is need for further studies into the implementation of multi-component and multi-level interventions for the effective prevention or reduction of childhood obesity. *ASFI Research Journal. 2025; S2(1): e123115.*

Application of remote sensing and GIS in rangelands management, north Kordofan State, Sudan

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Objective: The objectives of the study were to investigate and evaluate the practical application of remote sensing and GIS in rangeland management, to create relation between satellite images and biomass ground field measurements.

Methods: This study was conducted in North Kordofan State at 11 localities (Sheikan, Elrahad, Um-Rwaba, Bara, Gubrat-elsheikh, Sudari, Gubeish, Elnuhud, Abuzabad, Wadbanda and Elkhuway.). To achieve the objectives, both field ground measurements and satellites application were used. For field work loop and transect methods were used, while GIS-ARC map ERDAS, office EXCELL and ENVI software were used in satellite applications.

Results: Showed that relationship between satellite images and rangeland parameters can be used to assess range components.

Conclusion: The study concluded the use of GIS and remote sensing can use in assessing rangelands attributes in North Kordofan state. *ASFI Research Journal. 2025; S2(1): e123116.*

Enhancing human health and promoting food security through investments in cashew: Nigeria as a case study

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Cashew is a tropical evergreen tree native to Brazil but is now cultivated in other tropical climates across the world. Cashew nuts are edible and highly nutritious. The nuts are also rich in protein, healthy fats, and antioxidants such as polyphenols, which offer several health benefits. Although cashew is cultivated primarily for its food and health benefits, it also possesses great economic importance to grower countries. In Nigeria, for example, cashew is a major source of export revenue for the nation, and offers employment opportunities to millions of farmers, rural households, harvesters, transporters, processors, and also marketers. What this shows is that cashew is a veritable source of food security for many national economies. Food security, based on the 1996 World Food Summit,

refers to a situation when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. However, food security is not only about the availability of food, but also about better access to healthy food. In regard to Nigeria, as with the rest of Africa, ending hunger, disease and malnutrition are among the major challenges facing the populace. But since the root cause of food insecurity is poverty, the well-ordering of the cashew sector can help stem the problems of poverty and food insecurity, which are the major bane of economic development in the country. Cashew contributes significantly to the Nigeria's GDP and remains a source of foreign exchange earnings for the country. The goal of this review, therefore, is to examine how investments in cashew can improve Nigeria's economic base, enhance food security as well as the well-being of the people. *ASFI Research Journal. 2025; S2(1): e123117.*

Funding as a research innovation ecosystem problem in Africa: The case of Sudan

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Objectives: The primary aim of this study is to examine the funding challenges within the research innovation ecosystem in Africa, focusing specifically on the case of Sudan. This will be accomplished through the following specific objectives:

1. Analyze the current state of research funding in Sudan.
2. Identify the key challenges and barriers to securing adequate research funding.
3. Propose strategic interventions to improve the research funding landscape.
4. Explore the potential impacts of improved funding on Sudan's research and innovation ecosystem.

Methods: This study employs a mixed methods approach to gather comprehensive data on Sudan's research funding challenges. Quantitative data was collected through surveys administered to researchers, academic institutions, and funding bodies. Qualitative data was gathered through in-depth interviews with key stakeholders, including policymakers, university administrators, and private sector representatives, by google form. Additionally, relevant documents such as government reports and funding agency publications are analyzed to provide a broader context.

Results: A survey on research funding in Sudan reveals significant challenges, with 85% of researchers identifying funding gaps in specific specializations and 72% noting institutional impacts. Additionally, 70% believe research topics affect funding opportunities, and 50% agree that external funding shapes priorities. A majority (77%) acknowledge that adequate funding improves research innovation, but 73% feel the process lacks transparency. Funding applications vary in frequency, with success rates ranging from no success (32%) to high success (13%). Funding sources include government ministries, international organizations, and NGOs, yet challenges persist, such as bureaucratic complexities, topic and discipline biases, and political influences. Key strategies for improvement involve private sector involvement, long-term partnerships, and training in proposal preparation.

Conclusion: This study highlights the critical funding challenges within Sudan's research and innovation ecosystem. Limited resources, funding gaps across specializations and institutions, and biases related to research topics and disciplines are significant barriers to advancing research in Sudan. A lack of transparency and fairness in funding further exacerbates these issues, impacting researchers' ability to secure necessary support. The findings indicate that strategic interventions, such as fostering long-term partnerships, enhancing private sector involvement, and providing training on proposal writing and funding criteria, could help address these challenges. Improved funding mechanisms and policy reforms that support transparency and equitable access to funds are essential to drive innovation and sustain research development in Sudan's academic and scientific

communities. *ASFI Research Journal*. 2025; S2(1): e123118.

Fruits and vegetables consumption and reduced risk of hypertension among patients consulted at a rural hospital in Rwanda

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Objective: To determine the association between fruit and vegetable consumption and the reduction in the risk of hypertension among patients consulted at a rural hospital in Rwanda.

Methods: This study employed a cross-sectional study involving 404 adult outpatients of Ruli District Hospital, located in the Gakenke District in the Northern Province, from April to July 2020. A questionnaire adapted from the WHO STEPS Survey collected data on hypertension and behavioural risk factors, while blood pressure measurements followed international standardized protocols. We obtained ethical clearance from Mount Kenya University and the Ruli Higher Institute of Health in Rwanda. We analyzed data using SPSS and reported through descriptive statistics and regression models with 95% confidence intervals.

Results: The study revealed a 43.3% prevalence of hypertension, with participants averaging 45.6 years of age. While 35.4% of participants consumed fruits for an average of 3.57 days per week, 90.6% consumed vegetables for 5.09 days per week. Bivariate analysis

indicated that the absence of fruit consumption was significantly associated with hypertension ($p = 0.001$). Multiple regression analysis showed that participants who did not consume fruits were nearly four times more likely to have hypertension (AOR = 3.918; 95% CI = [1.694-9.063]).

Conclusion: The study concludes that hypertension prevalence is high, and the absence of fruit consumption is linked to increased hypertension risk, while fruit and vegetable intake is protective. It calls for public health interventions to promote fruit consumption to lower the risk of hypertension. *ASFI Research Journal. 2025; S2(1): e123119.*

Human capital development and economic growth in Nigeria

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Objective: Human capital, which is the combination of skills individuals acquire and possess in a society, is crucial in determining the wealth of nations. Unfortunately, UNESCO, 2020 insists that persisting bottlenecks in Nigeria's educational system may impede progress in enhancing literacy rates and human capital development. This study explores how healthcare impacts productivity and labour force participation and the need to understand how investing in education and healthcare can help advance Nigeria's economy.

Methods: This study uses the endogenous growth theory as its theoretical framework to investigate how Nigeria's economic growth is impacted by human capital development between 1990 and 2023. In order to analyze the data, some human capital indicators were applied, and the autoregressive distributed lag bounds testing approach was used.

Results: The empirical results demonstrate that, as a stand-in for the real gross domestic product growth rate, economic growth is strongly impacted by human capital development. Additionally, the analysis reveals that while the life expectancy rate has considerable negative effects on economic growth, the literacy rate

has significantly favourable effects. Additionally, low government spending on health and the enrolment rate in elementary schools has little effect on economic growth.

Conclusion: Human capital development is the nucleus of economic growth. It is one of the most profound catalysts for improving citizens' standard of living. Despite getting it wrong for decades, Nigeria can still achieve significant performance by taking advantage of her abundant human capital resources and investing significantly in the education and healthcare sectors. *ASFI Research Journal. 2025; S2(1): e123120.*

Integrating indigenous knowledge system in psychological research: shaping the future of research process in Africa

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Objectives:

1. To explore the current state of Indigenous Knowledge System in psychological research in Africa.
2. To examine the relevance and applicability of Indigenous Knowledge System to contemporary psychological issues in Africa.
3. To promote cultural sensitivity and inclusivity in psychological research in Africa.
4. To assess the effectiveness of Indigenous Knowledge System-informed interventions in addressing psychological and social issues in Africa.

Methods: This study employs a mixed methods approach, combining quantitative and qualitative methods to integrate Indigenous Knowledge System into psychological research.

Results: Initial findings indicate that Indigenous Knowledge System offers valuable insights into African psychological realities, highlighting the importance of community, spirituality and cultural values. In order to address mental health and social issues in African contexts, Indigenous Knowledge System-informed interventions demonstrate promising outcomes.

Conclusion: This study heralds the arrival of a new era of psychological research in Africa, one that values and respects Indigenous Knowledge Systems. By including Indigenous Knowledge Systems in psychological research, we can promote a more effective, inclusive and culturally psychological interventions, enhancing the well-being of African communities. *ASFI Research Journal. 2025; S2(1): e123121.*

Impact of government expenditure and inflation on economic growth in Nigeria

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Objective: In view of the vital roles macroeconomic variables represent in assessing the changes in the nominal and real trends, as well as the behaviour of local inflation, this study examines the unique dependence of Nigeria's economic growth on spending by the government and inflation. The amount of spending by the government, inflation trends and their effects on the economic progression in developing economies have always attracted global attention. This study seeks to analyze the impact of Inflation on economic growth in Nigeria and investigate the Interacting effects between government spending and inflation on economic growth from 1991 and 2022.

Methods: This study makes use of a set of time series data that were gathered from the World Bank database and the Nigerian Statistical Bulletin. Autoregressive Distributed Lag (ARDL) Model was used to estimate both short-run and long-run dynamics of government spending and inflation on the economic growth of the Nigerian economy. It also helps to address issues of cointegration and stationarity.

Results: The study's findings indicate a strong positive correlation between GDP growth and gross capital formation, an inverse relationship between GDP growth and inflation, and a significant correlation between government recurrent expenditure and GDP growth. These findings suggest that high inflation may impede economic vitality.

Conclusion: This comprehensive analysis provides valuable insights for policymakers, suggesting that an inclusive approach to economic strategy, encompassing infrastructure enhancements, institutional reforms, and macroeconomic stability, is crucial for sustainable economic growth. By integrating these findings with the Sustainable Development Goals (SDGs), the study underscores the potential for Nigeria to achieve a more robust, inclusive, and sustainable economic environment by aligning fiscal policies with the broader objectives of the SDGs. *ASFI Research Journal. 2025; S2(1): e123122.*

Awareness of malaria during pregnancy among women of reproductive age in Loate-Hujaj village, Gezira State, Sudan 2023

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Objective: This study aimed to measure the level of understanding among pregnant women regarding malaria transmission, protection, and treatment, especially the use of quinine in the first trimester, and the complications of malaria.

Methods: An observational descriptive cross-sectional study was conducted among 246 women of reproductive age (15-49 years) in Loate-Hujaj village. Data were collected using a structured, interviewer-administered questionnaire in February 2023. A convenience sampling technique was used. The data were analyzed using Microsoft Excel, employing descriptive statistics and logistic regression analysis to summarize the data and identify factors associated with awareness levels.

Results: The study revealed varying levels of awareness among participants. While a significant portion of the women were aware of the severe implications of malaria during pregnancy, there were notable gaps in knowledge about preventive measures and treatment options, including the use of insecticide-treated nets (ITNs) and quinine in the first trimester. Age and education level played a significant role in awareness levels, with younger women (15-25 years)

and those with higher education showing greater awareness.

Despite high awareness of malaria symptoms (94%), only 44% of women knew to visit doctors upon malaria infection in the first trimester, while a concerning 36% resorted to traditional treatments. Awareness of malaria complications, such as anemia and abortion, was moderate, with only 40% having comprehensive knowledge. Additionally, there was a lack of understanding regarding the complications of quinine treatment, although most knew it could lead to severe outcomes like abortion and bleeding.

Preventive measures knowledge was also insufficient, with less than half (48%) knowing about the use of mosquito nets, and a significant percentage believing in no prevention at all (32%).

Conclusion: The awareness of malaria during pregnancy among women in Loate-Hujaj village is moderate, with critical gaps in knowledge about prevention and treatment, especially regarding quinine use and its complications. Enhancing educational programs and integrating malaria awareness into antenatal care services could significantly improve the knowledge and practices of women in this region, ultimately reducing the burden of malaria during pregnancy. Further research is recommended to develop targeted interventions that address these gaps and improve maternal and neonatal health outcomes. Moreover, more research is needed on the complications associated with quinine treatment during pregnancy to provide clearer guidance and improve maternal and neonatal health outcomes. *ASFI Research Journal. 2025; S2(1): e123123.*

Investigating effects of introduction of career pathways in teaching of agricultural science in Serenje District – Zambia

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Objective: A cross-sectional study was conducted to investigate the effects of introducing career pathways in teaching agricultural sciences in Serenje district.

Methods: The study was conducted by administering 75 questionnaires that were purposively sampled and administered to teachers and pupils in four schools in Serenje district. The responses were coded for analysis using the Statistical Package of Social Sciences (SPSS) as an analysis tool. Descriptive statistics such as frequencies and percentages were adopted and used in figures and tables in the result presentation that was analyzed.

Results: It was also established that teachers teaching agricultural science in the school studied had little or no training in teaching agricultural science. Allocation of periods for teaching agricultural science per week varied ranging from 6 to 9 periods per week contrary to twelve (12) per week as recommended by vocational career pathways. The vocational certification was not given to pupils at both grade nine (9) and twelve (12) levels across the schools offering vocational career pathways in agricultural science in the district. Lack of materials, and facilities such as farmland, tools, and equipment contributed to learners failing to carry out practicals.

Conclusion: However, skills are acquired in career pathways in teaching and learning of agricultural science which has further built a holistic learner ready for innovations, and entrepreneurship in society. *ASFI Research Journal. 2025; S2(1): e123124.*

Circulating tumor cells a diagnosis and prognosis significance: a narrative review

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This review will discuss the potential roles of circulating tumor cells in the diagnosis and prognosis of Neoplasms.

The following steps were taken in the evaluation process; a review was conducted through several databases, including ResearchGate, Web of Science,

PubMed, and Scopus. Peer-reviewed articles and the use of English language were part of inclusion criteria. Opinions, positions, perspectives and reports that lacked scientific verifications and validities were excluded. This study will be carried out using standard literature search and review methods that will ensure its repeatability and reproducibility. Test searches were conducted using various combinations of search phrases in order to reduce the exclusion of relevant materials. Through the identification of substances secreted by tumors or tissue products elaborated by host cells in response to the presence of tumors has been shown to be useful in diagnosing primary tumors and the extent of metastases. Tumor circulating cells are also useful in monitoring patients' response to anticancer treatments including relapse, regrowth, recurrence and overall prognosis. The longstanding standard practice for clinical diagnosis and histological assessment, including receptor status and tumor grading, has been the use of tissue biopsies. The limitations of open biopsies include the following: tumor location, risk of biopsies to patients such as bleeding, infection and dissemination of tumor cells. The use of body fluids such as blood to detect the presence and extent of spread of tumors is gaining wide acceptance because of its obvious benefits and advantages. Such benefits and advantages are its non-invasive nature, more cost-effective and relatively easy to carry out. Furthermore, the sensitivity and specificity of circulating tumor cells provide significant benefits in the diagnosis and staging of malignant tumors, including breast, prostate, and colon cancers. *ASFI Research Journal. 2025; S2(1): e123125.*

A data-driven analysis of the main socioeconomic factors influencing higher education outcomes in Africa

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Objective: The primary goal of this paper is to determine the socioeconomic variables that have the greatest impact on higher education in Africa,

especially in the context of digital learning, social learning, and blended learning.

Methods: The paper employs a data-driven approach, analysing data from social capital indices, household income surveys, and enrolment statistics using advanced statistics and machine learning methods. Model performance is evaluated using precision and accuracy, and findings validated by domain experts.

Results: The results show a positive relationship between income and educational achievements and high predictive values from the models. Whereas household income influences higher education outcomes in Africa, there other exogenous variables that contribute significantly to education achievement in Uganda and Nigeria.

Conclusion: There is a low positive correlation between socioeconomic standing, income, and regional growth as well as enrolment and success in higher education. Increasing financial aid and investing in disadvantaged communities will promote higher education in Africa. *ASFI Research Journal. 2025; S2(1): e123126.*

Exploring parental attitudes and their influence on adolescents' access to sexual and reproductive health services in Mzuzu, Malawi

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Objective: The study sought to understand the effect of parental attitudes and parental concerns on adolescent access to sexual and reproductive health (SRH).

Methods: This research adopts a qualitative study design to explore parental attitudes and their influence on adolescent access to SRHS. In-depth interviews were conducted with a purposively selected sample of parents or guardians. These interviews focused on understanding the perceived risks and benefits for adolescents by accessing these services and the role of cultural and religious beliefs in shaping their attitudes.

All interviews were audio-recorded and transcribed verbatim.

Results: In many cultures, discussions around adolescent sexuality are taboo, and parental disapproval of SRHS can significantly limit adolescents' ability to seek and use these services. Parents may perceive SRH as inappropriate for unmarried adolescents, associating them with promiscuity or early sexual initiation, thus creating barriers to access.

Conclusion: Parental attitudes are influenced by various factors, including cultural norms, religious beliefs, and socio-economic status. For example, conservative and liberal societies may hold different views regarding access to SRHS. Recognizing the importance of parental views in promoting health & sexual development is crucial as it highlights the importance of understanding the specific cultural and societal context when examining the influence of parental attitudes on adolescent access to SRH. *ASFI Research Journal. 2025; S2(1): e123127.*

Physical activity level and emotion regulation among nurses in south-west Nigeria

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Objective: The study aimed to determine the level of physical activity and the emotion regulation strategy among nurses in Ogbomoso, a town in South-west Nigeria. The study aimed to investigate the relationship between nurses' emotion regulation and their physical activity.

Methods: This was a cross-sectional survey of 208 nurses from three hospitals in Ogbomoso town (Bowen University Teaching Hospital, Ladoke Akintola University Teaching Hospital, and State Hospital Ogbomoso). Physical activity was measured using the International Physical Activity Questionnaire (IPAQ) short form while emotion regulation was assessed

using the Emotion Regulation Questionnaire. Descriptive statistics were used to summarize data on sociodemographic profiles, physical activity level, and emotion regulation strategy while Pearson's correlation was used to test the relationship between physical activity level and emotion regulation.

Results: A total of 208 nurses participated in the study, with 31.3% of them between 40-49 years old and a majority being female (82.7%). Less than half (43.8%) of the participants engaged in high levels of physical activity while the majority (73.1%) of the participants used cognitive reappraisal as their emotion regulation strategy. There was no significant relationship between physical activity and emotion regulation strategy, with Pearson's Correlation showing a weak negative relationship between the variables ($r=-0.050$, $p=0.365$).

Conclusion: The majority of the participating nurses in Ogbomoso engage in moderate to high levels of physical activity. There was no significant relationship between physical activity and emotion regulation strategy, although there was a weak negative relationship between the variables. *ASFI Research Journal. 2025; S2(1): e123128.*

Ethics and research frontiers: views from African scholars

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Objective: This paper's main objective is to explore ethics and research frontiers and specifically to explore ethics challenges and research frontiers in Africa.

Methods: In order to capture the views of 7 African Scholars as collaborators, this paper adopts a Scholarly Personal Narrative as a methodology approach. The application of content analysis deemed sufficient to avail the emerged themes to serve as narratives to address the posed question "What are the ethical challenges in advancing research frontiers in your field?"

Results: The findings revealed that the scholars from different fields comprising economics, health, management, medicine, statistics, and tourism opined that there are ethical challenges in advancing research frontiers in Africa. Further findings show that some of these challenges are “manipulation of data”, “culture of the community towards research”, “delay of clearance approvals”, “lack of one stop shop for clearance permits”, “transcribing questionnaires”, “consents”, “cultural sensitivity”, “no grants”, “highly competitive grant application”, “poor collaboration” and “inability of the government, private sector and community to utilize most of the research findings to impact life changes and improve the society ” which prevent the advancing of research frontiers in the continent of Africa.

Conclusion: This paper’s outcome has a practical implication for the government bodies and agencies dealing with research issues to improve processes such as minimizing delays on clearance approvals and sensitizing the community on the benefits of research and encourage research collaboration. Future studies may apply quantitative and qualitative methods to further examine the phenomenon of research frontiers in Africa. *ASFI Research Journal. 2025; S2(1): e123129.*

Technology and travels in African research: scholars perspectives

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Objective: This paper explores technology and travels in African research from the scholars’ perspective. Specifically, this paper explores technology advancement and study locations in African research from a tourism scholars’ perspective.

Methods: The methodology adopted for this paper is a Scholarly Personal Narrative in order to obtain the scholar’s experiences of technology advancement and study locations in reference to research. The gathered information on experiences are analyzed using content analysis to avail themes.

Results: Among the findings is that the use of technologies such as “COLLECT” can ease data collection. In addition, the study locations can also be “part of innovation” in research since no single study has the ability to cover all African countries.

Conclusion: This paper’s outcome on technology and travels can assist education practitioners to consider technology advancement and study locations in unleashing innovation in African research. *ASFI Research Journal. 2025; S2(1): e123130.*

Physical activity, weight bias and smartphone addiction among undergraduates in a west African university

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Objective: Smartphone addiction has physical and psychological effects on students. Weight bias, which is the negative, prejudicial attitudes to increased adiposity (or obesity), can be promoted through smartphone-social media use. The objective of this study was to assess the relationship among physical activity level, weight bias level and smartphone addiction among undergraduates of a university in West Africa.

Methods: This was a cross-sectional study of 399 undergraduates of Bowen University, Nigeria, who were recruited using stratified proportionate sampling technique. Physical activity was assessed using the International Physical Activity Questionnaire Short Form (IPAQ-SF), weight bias was assessed using the Anti-fat attitude Questionnaire (AFA), while smartphone addiction was assessed using some information from the socio-demographic section and Smartphone Addiction Scale (SAS). Data were analyzed using descriptive statistics and inferential statistics (Pearson’s correlation co-efficient). The Statistical Package for Social Sciences version 23.0 was used for data analysis with alpha level set at 0.05.

Results: The mean age of the participants was 202 years. Less than half (48.6%) of the participants had a low physical activity level, majority (93.5%) were addicted to their smartphones (93.5%) and the total AFA mean score was 3522 indicating a minimal weight bias level. Significant correlations ($p < 0.05$) between smartphone addiction and each of weight bias and physical activity were respectively positive and negative. Notably, there was a positive correlation between PA and weight bias ($p = 0.063$).

Conclusion: Smartphone addiction among students reduces their likelihood of engaging in physical activity, which may lead to an increased risk of developing non-communicable diseases. Smartphone addiction could also increase weight bias, negatively affecting students' self-esteem and leading to an increase in psychological and/or mental health issues. Digital well-being and participation in physical activity should hence be encouraged among students. *ASFI Research Journal. 2025; S2(1): e123131.*

Effectiveness of a malaria educational training on knowledge, attitudes and practices among Patent Medicine Vendors in a Nigerian community

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Objective: The study aims to evaluate effectiveness of a developed malaria educational training among PMVs in Yobe-South district, Nigeria.

Methods: The trial was first registered then a randomized, single-blinded, placebo-controlled community trial was designed. 292 PMVs were randomly selected and allocated to intervention and control arm.

A module was developed and delivery was based on the Information-motivation-behavioural skills model. Validated pretested questionnaires were used to measure KAP at baseline, immediate, three- and six-

months post-intervention. Data were analysed using SPSS version 23. Quantitative variables were summarized using mean and standard deviations. Outcome variables were assessed for violation of assumptions of ANOVA including normality test, test of homogeneity of variances, and correlation matrix computed. One-way ANOVA, two-way repeated measure ANOVA and Bonferroni tests were used to assess effectiveness of the intervention. P-value < 0.05 was considered point of significance and partial eta-squared measure of effect size.

Results: Response Rate is 97.6% after 6-months post intervention and 96.6% respondents were male. Skewness and kurtosis measures were close to zero showing no significant difference from normality. Correlation calculation and matrix between means of baseline outcome variables showed no significant correlation. No significant difference was found between baseline mean scores for KAP, but there was significant improvement in respondent's knowledge for intervention arm with large effect size (partial eta $\eta^2 = 0.562$, $p < 0.001$). Similarly, the intervention effectively improved respondent's overall attitude and practice scores with large effect size ($\eta^2 = 0.297$, $p < 0.001$) and ($\eta^2 = 0.529$, $p < 0.001$) respectively.

Conclusion: The study was effective in improving knowledge, attitudes and practice of respondents. It also proves that education levels of respondent PMVs influenced KAP of respondents while attending training to become PMV influenced only knowledge of respondent PMVs. The developed module and elaborate training approaches can be adopted by government, regulatory agencies and PMV associations. *ASFI Research Journal. 2025; S2(1): e123132.*

Knowledge and perception on the use of psychoactive substances among commercial motorcycle riders in a North East Nigerian community

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Objective: The main objective of this study is to assess the knowledge and perception on the use of psychoactive substances among commercial motorcyclists in the university town of Gadau, where Bauchi State University has its main campus.

Method: A cross-sectional descriptive study was carried out among 84 respondent commercial motorcyclist, selected via a multi-stage sampling technique. Data was collected by the use of semi structured and self-administered questionnaire and this was interpreted as frequency tables.

Results: Majority of the respondents were between the ages of 21 to 29 years (44.7%) and over half (55.3%) had western knowledge. A high number (67.1%) had ever used psychoactive substances without medical advice, while (40.8%) had used one or more substances to make them more active at work and thereby increasing their working periods and hence profits. Furthermore, only about 3.9% of respondents take alcohol while 15.8% smoked different sorts of cigarettes. 13.2% had taken Tramadol and 23.7% admitted taking marijuana.

Conclusion: The prevalence of psychoactive substances use among commercial motorcyclist was found to be high. There is however a high perception of the negative consequences of the use of these substances that does not interpret into reasons for their avoidance. Government and non-governmental agencies should target this category of youth with behaviour change activities, in an effort to drop this negative trend that is gradually damaging public health. *ASFI Research Journal. 2025; S2(1): e123133.*

The effectiveness and acceptability of online intervention tools for older people with depression in Sub-Saharan Africa: A literature review

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Objective: The study sought to understand the effect and acceptability of online intervention tools for older people with depression in Sub-Saharan Africa.

Methods: This is a review of literature where we summarized and analyzed current evidence on depression in the older community, the online intervention tools' effectiveness and their acceptability by the elderly, and implications for treatment.

Results: Technology is taking over by storm. This technology is embedded with values and intentions, so the older community must be abreast with technology. It is evident that the result of decisions and actions is made by humans, and it is then used by humans with motivations and goals. Everything is energized by digital information and computation; however, cultural considerations should be incorporated when planning, designing, or facilitating online intervention tools for the elderly population.

Conclusion: Effective treatment is essential as depression can lead to suicide, which WHO says has resulted in over 700,000 deaths each year worldwide.

Contribution: The importance of a prodromal role for depression in dementia should not be underestimated, and Clinicians must be alert for psychiatric symptoms in late life as the presenting symptom of a neurodegenerative disease. *ASFI Research Journal. 2025; S2(1): e123134.*

Impact of financial development measures on income inequality in Nigeria

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Objective: For socioeconomic analysts, income inequality has always been a critical problem, particularly in emerging nations, where it is seen as an obstacle to harmonious integration and economic expansion. Nigeria had a Gini ratio of 35.1 in 2022 (World Inequality Report, 2022), placing 11th in West

Africa and 100th out of 163 nations globally. The progress of financial development in Nigeria has been notable. However, income inequality remains prevalent, supporting the 10th goal of the Sustainable Development Goals (SDGs), emphasising the reduction of inequality within and among countries and underscoring the importance of understanding the interaction of financial development on income inequality in Nigeria.

Methods: The data were sourced from the World Bank, UNU-WIDER, and the Central Bank of Nigeria from 1991 to 2022. The analysis method is Autoregressive Distributed Lag Estimation to check the impact of financial development on income inequality.

Results: The findings indicate a complex relationship between financial development and income inequality, with significant variations across different financial sectors. Initial financial development may increase inequality, which later declines as financial systems mature. The coefficients of the measures vary across the models. Thus, the impact of financial development on income inequality varies across selected financial development measures in Nigeria. Likewise, a non-linear relationship exists between selected financial development measures and income inequality in Nigeria.

Conclusion: The effects of each financial development measure on income inequality vary in magnitude from one indicator to the other. Expanding the reach of financial services can reduce the gap between the affluent and the underprivileged, ultimately leading to a fairer income distribution. *ASFI Research Journal. 2025; S2(1): e123135.*

Ameliorative effect of selenium on gastrointestinal damages following oral administration of indomethacin in male Wistar rats

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Objective: Nonsteroidal anti-inflammatory drugs (NSAIDs) are a group of drugs widely used in the treatment of inflammation and pain. However, research has shown that NSAIDs can result in gastrointestinal damages. Selenium is an essential trace mineral that is crucial for various body functions such as proper functioning of the immune system. It plays a vital role in redox balancing and possess antioxidant properties. The study seeks to determine the effect of selenium on gastrointestinal damage following subacute administration of indomethacin.

Methods: Twenty male Wistar rats, weighing 200-250g were used for the study and were randomly divided into four groups (n=5). Group 1 (Control), groups 2- 4 received Indomethacin (5 mg/kg) daily, while groups 3 and 4 also received Selenium (2 mg/kg) and Omeprazole (20 mg/kg) respectively. All administrations were done orally for seven days and thereafter the animals were sacrificed. Blood samples were collected for serum determination of TNF- α and NF- κ B. The stomach and colon tissues were collected for determination of oxidative stress and antioxidant parameters.

Results: Stomach and colon levels of total antioxidant capacity (TAC), SOD, GSH were significantly decreased in the indomethacin only group which was accompanied by an increase in MDA and Hydrogen peroxide levels. Selenium and Omeprazole administration significantly reverse these effects. Serum levels of TNF- α and NF- κ B increases significantly in indomethacin only group compared to control however, selenium and omeprazole significantly ameliorate these changes. Selenium also significantly increases CAT and NO levels in the stomach compared to indomethacin group.

Conclusion: The results suggest oral administration of selenium may be beneficial in preventing oxidative stress in the gastrointestinal tract and gastrointestinal damages as a result of NSAIDs administration. *ASFI Research Journal. 2025; S2(1): e123136.*

Antibacterial Activity Screening and Pharmacodynamic in silico Study of New Synthetic Chalcones

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Objective: Infectious diseases are major public health problem therefore, development and discovery of new antimicrobials is needed. The computational bioinformatics tools play an imperative role in understanding the drug-receptor molecular recognition events.

Objective: To perform an *in silico* investigations for antimicrobial activity of four new synthetic chalcone compounds (TChD: 01-04) and to determine the exact possible mechanism(s) and the site(s) of action.

Methods: Four synthetic chalcone derivatives were screened using AutoDock Tools 4.0 facility for their antibacterial activity through selection, optimization and validation of the optimum possible bacterial target(s), chalcones were docked into the active pockets and the most promising compound(s) and optimum target(s) were determined. Binding affinity of the promising synthetic compound(s) with the selected optimum target(s) were obtained by molecular dynamics simulation using Molecular Operating Environment (MOE) program. Bemebenek and Lipinski rules were applied to evaluate ligands efficiency to be a lead candidate for new drug discovery. Data was analyzed statistically by comparing the tested results with the relevant standards of the most promising target(s).

Results: Compound (TChD-02) docking results demonstrated a higher score in terms of binding free energy with two targets; Dihydrofolate reductase and bacterial DNA gyrase; ($\Delta G_{\text{bind}} = -8.21 \pm 0.09$ and -8.89 ± 0.12), respectively, with statistically significant difference and more affinity than the standard ligands trimethoprim ($p = 0.0394$) and ciprofloxacin ($p < 0.0001$). Molecular dynamics simulation confirmed an enhanced binding of compound TChD-02 with both targets as calculated by the number and score of hydrogen bonds. RMSDs linear regression values confirmed linearity for the optimum relevant targets indicating protein systems stability.

The Impact of Transport Energy Consumption and Economic Growth on Carbon Dioxide Emissions in South Africa

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Objective: Carbon dioxide emissions come from the combustion of energy, and can trap excess heat from the sun entering the earth's atmosphere, resulting in climate change. Energy use from fossil fuels has been highlighted as a key source to environmental pollution. Social development and economic growth require energy as an input to a variety of economic production activities. Higher economic activity levels are frequently complemented by increased resource and energy consumption. The transportation industry relies on energy more than any other sector. This study aims to clarify how energy use in the transport sector and economic growth affect CO₂ emissions. Recognizing the association amongst these variables is critical to ensuring stability in climate.

Method: The investigation was made using the vector autoregressive model (VAR) and vector error correction model to determine short term and long-term relationship between the variables of the study.

Results: The study show that in the long run that there is an inverse linear relationship between transport energy consumption and CO₂ emissions and as well as between GDP and CO₂ emissions. However, in the short run both transport energy consumption and GDP have a positive relationship with CO₂ emissions, meaning that an increase in either variable leads to a rise in the CO₂ emitted in the country. The results also confirm the hypothesis of the Environmental Kuznet Curve in the short run, which suggests that increasing economic growth levels first pollute the environment until a particular growth level is reached, upon which the amount of pollution begins to drop.

Conclusion: The issue of CO₂ emissions linked to rising energy consumption is significant and needs coordinated and comprehensive solutions. Also, as the economy develops the government should invest more

on programmes that seek to improve environmental degradation.

Lived Experiences of Maternal Near Misses: A Qualitative Study in the Kilimanjaro Region, Tanzania

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Objective: In recent years, Tanzania has made progress in reducing maternal mortality rates, but pregnant women still face health risks. Our research aimed to understand the experiences of Tanzanian women who survived severe maternal complications.

Methods: Twelve women who survived severe maternal complications were interviewed between August and September 2022. The study used a descriptive qualitative design to explore their experiences. The analysis revealed four themes and eight subthemes, including the impact on social life, perception of care services, and person-centred care.

Results: Maternal near misses significantly affect women's physical, financial, and mental well-being. Good healthcare, person-centred care, patient education, and psychological support can improve women's experiences. In recent years, Tanzania has made progress in reducing maternal mortality rates, but pregnant women still face health risks. Our research aimed to understand the experiences of Tanzanian women who survived severe maternal complications.

Conclusion: Maternal near misses significantly affect women's physical, financial, and mental well-being. Good healthcare, person-centred care, patient education, and psychological support can improve women's experiences.

Trial of Cotrimoxazole and Cotrimoxazole-Medicinal Synthetic Aluminum Magnesium Silicate Formulation on Rectal Temperature of Healthy Sheep.

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Objectives: To verify, in sheep, the observation that Cotrimoxazole worsened fever in trypanosome-infected mice, while Cotrimoxazole-MSAMS formulation caused subnormal rectal temperatures in healthy mice.

Methods: Three groups of healthy sheep (4 per group) were used for assessment of rectal temperature (°C). One group was dosed/treated with Cotrimoxazole; a second group was dosed with Cotrimoxazole-Medicinal Synthetic Aluminum magnesium silicate (MSAMS) formulation while the third group served as a control (untreated). The treatment lasted for 5 days in each case while the rectal temperature of each sheep in the three groups was measured each day of the treatment and for 7 days post-treatment (PT).

Results: The results of the study indicate that neither Cotrimoxazole nor the Cotrimoxazole-MSAMS formulation had a significant impact on the rectal temperature of the healthy sheep.

Conclusions: The finding is in line with the previous findings that demonstrated absence of a significant increment in rectal temperature of healthy or trypanosome-uninfected mice treated with Cotrimoxazole alone, but negates the findings of subnormal rectal temperatures in trypanosome-uninfected or healthy mice treated with Cotrimoxazole-MSAMS formulation, as well as in trypanosome-uninfected West African Dwarf Sheep treated with Cotrimoxazole-MSAMS formulation. These results suggest that Cotrimoxazole and the Cotrimoxazole-MSAMS formulation are well-tolerated in sheep, in the absence of trypanosome infection. The lack of significant changes in body (rectal) temperature observed in this study provides valuable insights into the potential application of these treatments (drugs) in livestock health management.