Blue Economy: A Study of Sand (Nveja) Mining Industry and the Economy of Ebonyi State, Nigeria, 1999-2023

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Abstract— Sand deposit is one of the mineral deposits that are found in, and obtained from rivers in different parts of Ebonyi State. The research is anchored on Linkage Theory developed by Albert Hirschman. This theory suggests that a leading sector, such as the sand industry as a component of blue economy can drive economic growth and development through its linkage with other sectors. Strict investigations revealed that its impact on the economy is conspicuous on the areas of extraction, distribution, and construction. Data were generated from primary and secondary sources. They were analysed qualitatively, using content analysis to identify that the industry was an important source of revenue and employment, providing invaluable support to the sector of construction. It is further discovered that the main sources of sand for construction in the state are rivers and their banks. The rivers cut across various places that are not limited to the communities of Ezza, Izzi, and Afikpo. Its negative effects, such as environmental and health risks, and challenges were investigated. It is discovered that the management practices, involving use of local skills, and manual mining approach are inadequate and could not sustain a long-term extraction, and distribution of the wealth for sustainable profit maximization. So, the enterprise requires a thoughtful and problem-solving policy that could create a conducive environment for achieving profit-oriented sand mining enterprise. This pursuit would be strengthened by subsidizing the cost of mechanising the industry. Implementation of such a scheme would involve active participation of entrepreneurs, alongside some critical stakeholders of all religions.

Keywords: Sand-mining; Industry; Economy; Rivers; Ebonyi State

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INTRODUCTION

Efforts of man to shape his environment to facilitate his survival, and sustainability require, among other things, construction. The practices that involve both the mental and physical efforts to shape the environment through construction for example, refer to the science and technology (Woolgar, 1991; Attah, et al., 2023; Ekpo, et al., 2025). However, without suitable sand, building and construction of areas that are not limited to homes, roads, markets, schools, hospitals, and recreation centres during the period under review could have been almost impossible (Ekpo, M., & Alobo, 2018; Ekpo, et al., 2018). As one of the natural and mineral resources sourced from rivers in the state, it has always remained very significant in the sector of construction (Ironbar, et al., 2025). No doubt, the present-day Ebonyi State in the Southeastern region of Nigeria is blessed with numerous rivers with different beaches where sand mining is conducted.

Before the creation of Ebonyi State in 1996 and subsequent return of civilians to power in 1999, the people of the state had no elaborate means of raising modern homes, roads, and other modern facilities that characterised towns and cities. To that effect, they had no much need for sand in the area. Evidently, the environments of the state had limited modern structures. So, almost all roads in Ebonyi State, for example as at 1999 were impassable, various homes and communities were as well, characterised by mud houses (T. Usulor, personal communication, December 15, 2025). It was the Olusegun Obasanjo-led administration that awarded the contract for construction of Abakaliki-Afikpo and Abakaliki-Enugu roads in 2000. In absence of industries in the area, the civilian regime of the 4th republic further, provided more opportunities for spread political participation and employments, thereby leaving more incomes in the hands of the people of Ebonyi State. Exposing the people to better life meaningfully provoked their appetite for modern structures and facilities which they could afford.

Their vitality in raising modern structures, homes and businesses alongside government engagement in construction of roads intensified the need for sand. It therefore, revolutionalised the sand mining industry in the state. Many people of the area became attracted to the industry, extracting the mineral from various rivers and river banks in the state. Others were stimulated to invest in transport sector, procuring tippers for distribution of the mineral. As drivers turned over in the beaches, many young or able-bodied people loaded the tippers with the sand. The rise of the industry to satisfy the increasing demand for sand since 1999 makes the sector worthy of study.

STATEMENT OF PURPOSE

The study aims to investigate the impact of the industry on the local economy since 1999. The researcher observed inadequacies in documentation of the position of the industry in the economy of the state. The intention is to unveil the nature of this

form of blue economy in different parts of the state, and its overall contributions to the economy alongside its challenges. It would fill the knowledge lacuna which combats against effective planning, management, and development of the industry as a tool and institution for economic growth and development. This study consciously declares to raise a veritable tool or document for policy-makers, and stakeholders seeking to promote economic diversification and transformation through sand industry.

RESEARCH METHODOLOGY

In conducting this research, historical sources were explored and used. The sources include primary and secondary sources. The primary source material utilized is oral evidence. The secondary source materials utilized include books, and journal articles. On the part of primary source, evidences were drawn from a number of elders, and critical stakeholders from different parts of the state.

During the research, some interviews were phone-recorded while in some, notes were taken down. Some of the interviewees were left to exhaust themselves on each question asked; before they were asked certain questions structured in such a way to expatiate more on any part of the topics which was either left out or scantily discussed. Secondary sources, such as the books, and journal articles availed the researchers with ideas from related and relevant works on the area and topic of study to improve the quality of the research. Generally, this study relied on qualitative data collection and content analysis. By skillfully employing the Linkage Theory, the study explored and analysed the Sand Industry and the Economy of Ebonyi State, Nigeria between 1999 and 2023, unfolding how the industry has reinforced other sectors of the economy, its challenges and way forward.

THEORETICAL FRAMEWORK

Linkage Theory provides a suitable model for analysing the Sand Mining Industry and the Economy of Ebonyi State, Nigeria, between 1999 and 2023. The theory as conceived by Hirschman is of the view that a leading sector can drive economic growth and development through its linkage with other sectors (1958). In this research, the sand industry is the leading sector that bolstered other sectors to facilitate diversification, and transformation of the economy. The sectors of agriculture, other crafts and industries, and trade and commerce gave to and receive from the sand industry. Agriculture for example, provides the industry with food for its workers, while the industry releases its product (sand) which supported building and construction homes, roads, among other facilities for the sand miners. The industry further reinforces manufacturing of paints and ceramics. It as well, serves as a source of revenue to government, thereby supporting government efforts to investing in infrastructure development, promoting local contents and skills development in the

area. In all, the industry facilitated employment, economic diversification and transformation, and development in all areas of life.

SAND MINING IN EBONYI STATE

Just as we earlier observed, the main sources of sand (*Nveja*) in the area were rivers, streams and sea shores or river banks. It worthwhile to note that sand mining industry depended mainly on manual labour. The local sand miners, including males and females used to descend into the rivers or streams with their head-pans, hoes, shovels, or bags, fetched and dropped the sand either in canoe or walked to the open land to drop it. The fetched sand made numerous heaps at different beaches of Idembia, Ndibe, Akpoha, Onubonyi Izzi, Ukawu, Isinkwo, among others. The heaps of sand were dismantled and loaded on either tippers or trucks by loaders (usually young and able-bodied men) at the beaches. These tippers or trucks were used for transferring or supplying the product to where it was needed (Ongele, 2020).

In this process, local tools, such as head-pans, shovels, canoes, among others were in vogue in the state. Irrespective of the increasing scale of demand in more than the first two decades of the twenty-first century, the local tools could not phase off completely. Of course, activities in the industry got intensified in some beaches in places as Afikpo and Akpoha with introduction of sand mining machines (S. Nkama, personal communication, December 17, 2025). These machine facilitated speedy access to large quantity of sand in the rivers, bringing it to the land around the beaches. The scale and quantity of sand produced on the daily basis with the aid of the miners and mining machines enabled effective response to the increasing demand for the product during the period. Obviously, all activities relating to mining and supplying of sand became viable sources of livelihood to numerous people in the area. If a sand fetcher (miner) was hired by a co-miner, he or she is paid according to the number of drops made. Sometimes, men (especially young ones) used canoe to go far on the stream or river to fetch the sands to the river-side before transferring it to where it was concentrated.

It is widely believed by the people that certain forces controlled availability of sand, and success in the mining industry. For them, marine spirits controlled and determined all that happened in relation with the water bodies. Those forces were however, engaged and appeased to release sand ceaselessly from the rivers in large scale, and cause no harm to the miners and their relatives. To fulfill this rituals or sacrifices, the mine workers contributed annually to procure items, such as cola-nut, fowl, goat and even cow for the sacrifice (Ongele, 2020). It is evident that each year the sacrifices were made; the people believed to had received supports of marine powers for favours in the industry. In those years, they operated seamlessly in the rivers and beaches, recording successes without misfortunes.

It is as well, important to observe here that trade unions were formed in the various beaches in the state within the period under review. The mine workers and miners had their union, the loaders had theirs, and the tipper and truck drivers had theirs. Some are registered with Corporate Affairs Commission (CAC) as cooperative societies (A. Igwe, personal communication, December 14, 2025). Members of each of the unions were bound to strictly adhere to their defined rules of operation or be sanctioned accordingly. In all, their main aims were to ensure smooth running of the industry to guarantee their interests, regular availability and effective distribution of their product. They further tried to sustain good relationship with government, ensuring that government revenue was collected accordingly.

Uniform prices were often maintained in each activity that concerned mining and supplying of sands to customers. For example, between 1980s and 1999 the cost of supplying each loaded trip to a construction site was between #5000 and #10,000, depending on the distance and seasons (rainy and dry). It was the tipper driver that cleared the cost of every stage of work or service that required payment until the sand was successfully supplied to the customer, except otherwise discussed. The increasing demand for sand and other materials for construction in different parts of the state since the beginning of Samuel O. Egwu-led administration was the major significant factor that led to the increase in prices of those items. Up to 2015, the cost of a trip of sand fell between ₦10,000 and ₦15000 (Ongele, 2020). Between 2015 and 2023 (the end of Goodluck E. Jonathan-led administration), the price of a tipper of sand fell between ₦25,000 and ₦45,000. Truck that were supposed contain up to three trips of tippers were between ₦125,000 and 135,000.

The democratic administrations from 1999 provided opportunities for more wealth acquisition than the previous ones. This was achieved through provision of employment opportunities and conducive environments for self-employment and investments, leading to increase in savings set aside for construction of roads and modern structures, and manufacturing. Individuals were as well, stimulated to pool their resources into construction of modern homes. It is verifiable that some places in the state were without either mud or thatched houses before 2023. Examples of such towns include Abakaliki, Onueke, Afikpo, and Ezzamgbo (I. Nweke, personal communication, December 17, 2025). All these were bolstered by the Sand Mining Industry, Ebonyi State which provided ceaseless supply of sand to the people.

Some quarry sites, such as Akpoha-Afikpo Stone Mining (Quarry) Industry, Isiagu Stone Mining (Quarry) Industry, and Umuoghara Stone Mining (Quarry) Industry provided the construction sites with stone earth (dusts) which strengthened and standardized the works and products of construction firms, block industries, and construction activities in the state. It is evident that before the end of David Umahi-led administration in 2023, all construction companies, and block industries in the state

were compulsorily charged to operate with a mixture of sand (*Nveja*), stone earth (dusts), cement and other essential products. Enforcement team was inaugurated by the government to ensure that the condition for operation in the state was strictly kept. The stone dust is meant to strengthen and improve the quality of the outputs of block industry in the state (Mmonwuba, 2025).

SAND MINING AND OTHER SECTORS OF THE ECONOMY

Of course, sand mining is one of the economic activities at the primary stage of production. To all appearances, the enterprise is an integral part of crafts and industries at extractive level. Its product (*nveja*) supports other sectors of the economy. In the area of agriculture specifically, the product enabled construction of shelters, agro-based markets, and other farm buildings and structures, such as storage and processing facilities for farmers. It is obvious that those structures that were raised to modern standard within the period under discourse reinforced and promoted productivity and food security. (J. Agwu, personal communication, November 30, 2025).

On the other hand, sand mining resulted in water and soil violation, thereby reducing soil fertility and negatively impacting crop and plant growth. The mining activities are capable of contaminating rivers where sources of water for both domestic and industrial uses. Contaminated water sources are however, unsuitable for conducting various agricultural activities. This adversely affected the availability of good water for farmers' consumption and all-seasons cropping. It further destroyed aquatic ecosystems, making it difficult for farmers to have access to their required food nutrients for their health (Ekrami etal., 2021).

Land violation, such as erosion and land subsidence, were attendant effects of sand mining. No doubt, the sand (*Nveja*) is a part of land, its constant removal and using its heaps to occupy areas of soil is a factor for loss of soil, and led to alteration of terrain, provoking soil erosion and habitat disruption (Ekrami etal., 2021). These activities of mining extracting resources from water bodies adversely affected soil availability for agriculture (Obasi, 2014). These were the circumstances that generally combated against food security and self-sufficiency among the people of the area under study.

Sand mining industry facilitated crafts and industries within the period under discussion. It led to the availability of sand for domestic, industrial and commercial purposes, thereby satisfying human desires in their domestic and economic environments. Sand doubtlessly, is one of the raw materials for construction of industrial structures, such as factories, industries, workshops, and firms. It equally served as one of the tools for pottery and frying groundnut. The industry bolstered acquisition of skills of mining, and loading sand in the area (Ongele, 2020). This is achieved through regular participation in the activities of mining.

The industry further provided the society with sand (ware) for trade and commerce. In the first place, markets were established in different communities of the area between 1999 and 2023. Such markets for sand mining industry in the state were the beaches, tipper and truck offices and parks, and sand storage centres. The sand was sold and bought through the support ofthose branches of the industry. To ensure availability of the product (*nveja*) at all times and seasons, storage plan was adopted. While land areas around the beaches hosted extracted sand, miners and customers engaged services of tipper and truck drivers at their parks or offices. Where there was shortage of sand in the beaches, storage centres enabled access to the ware (sand) (S. Agha, personal communication, December 11, 2025). So, the sand storage practice sustained access to and distribution of the product, especially during rainy season. The ability of the people to mine, store and distribute sand depicts their immense contribution toward sustaining the economy since 1999.

The means of transportation that gave access to the mining sites and distribution of the product were mainly by land (specifically, road transport). Since the major sand mining sites are the beaches of rivers, water transport was as well necessary for the success of the enterprise. Therefore, using canoe for mining sand, and evacuation the mineral from water bodies became necessary. Extremely, its distribution or transfer from one place to another mainly depended on the use of tipper and truck. In this regard, the drivers were primarily engaged by customers for their supply. In most cases, the drivers served as the middlemen who bought from the miners or mine workers at the beaches or storage centres and sold same to potential customers and buyers. The reasons for chiefly depending on drivers and their vehicles are not limited to the fact that the product cannot be conveniently conveyed from one place to another without such machine that can host it from the mining sites to various sites of need (S. Agha, personal communication, December 11, 2025).

EFFECTS OF SAND (*NVEJA*) MINING INDUSTRY IN EBONYI STATE

Sand mining enterprise is a significant economic institution that supported development efforts in Ebonyi State. The institution deals in extraction of sand (nveja) from rivers and river sides. The sand (*nveja*) supported construction and manufacturing activities, leading to economic growth and development. To that effect, it served as a source of employment to people. Of course, as it engaged people, it remained a source of employment and income to individuals and government.

It resulted in environmental pollution in the state. Its activities intensified erosion, water pollution and loss of biodiversity. The continuous removal of sand weakens the soil and promotes regular wearing away the soil. Its extraction beyond the stipulated limits leads to mass removal of sand particles on the mining location which subsequently results to destruction of the area and altering the land features. This is

associated with the destruction of various riparian areas, highly raising the sediment load of streams, which can result in environmental degradation and siltation of the downstream water body, culminating in flooding. This further, opens the area of the river, and changes its direction. The gradual loss of riverbanks to the mining enterprise caused encroachment on lands for agricultural purposes (Oben, et al., 2011; Giadom & Akpokodje, 2016; Nwosu, N., & Ajimase, 2016;).

The industry opens people to health risks and loss of lives in the heightened depth of rivers. Manual mining of sand requires mine workers to be sinking into the rivers with their head-pans and shovels for instance, to fetch the sand. In this regard, numerous sand miners were opened to health risks, such as cataracts, conjunctivitis, and retinopathy. Others, such as Nworie Nwanga lost their lives in the in the enterprise, (N. Nwakpa, personal communication, December 11, 2025). Much as the risks involved, sand mining deepened in the state since 1999 due to the increasing demand for its product for construction in numerous places coupled with the abundant availability of sand deposits in the rivers. As intensified sand mining was among other things driven by the state's rapid infrastructural development, the associated negative environmental and socio-economic impacts began to manifest and garner public attention.

Still on the public health, fine particulate matter from dredging activities causes respiratory illnesses, placing human health in jeopardy. Toxic fumes from vehicle emissions and dust clouds contribute to adverse health outcomes. Inhabitants of nearby settlements are also exposed to increased risks of accidents, malaria, and other diseases. Noise pollution from blowing dust and engine operations is prevalent in these environments. Riverside communities report water-borne infections such as typhoid, diarrhoea, dysentery, and skin diseases, while drops in water quality intensify the dangers associated with cooking, washing, and drinking. Seepage from spoil yards pollutes groundwater sources; coupled with deforestation and excavation near water bodies, these factors heighten health risks among surrounding populations (Giadom & Akpokodje, 2016).

Loss of biodiversity is another consequence of sand (nveja) mining (Nabiebu & Ekpo, 2025a: Nabiebu & Ekpo, 2025b; Nabiebu, 2025a). The activities of mining violate the water bodies, thereby neutralizing viability for industrial and domestic use. Investigation revealed that natural habitats of various animal and plant species are either degraded or destroyed. Citing the unregulated sand mining along the banks of the Eyaa River in Onne, River State, Nigeria it is revealed that the extraction of sand, gravel, and stones has facilitated gully formation and stream channel enlargement, resulting in the disappearance of native flora and a reduction in biodiversity (Giadom & Akpokodje, 2016; Nabiebu, 2025b; Nabiebu, 2025c). The associated use of explosives and vehicular traffic on roads congested by large mining equipment also contributes to deaths from injury. The lack of potable water and consequent consumption of

contaminated water alongside the demolition of places of worship around the rivers equally resulted in death and threat to some lives in the state.

The working conditions at sand mining sites put workers' health at risk. Occupations related to sand mining include failure to use personal protective equipment, poor housing, reckless handling of tools, extended working hours, and heavy physical exertion, all of which compromise health. Excessive workloads and erratic breaks overwhelm workers, preventing adequate physical and psychological recovery. Backache, body pain, muscular-skeletal strain, and respiratory problems are among the occupational health issues frequently reported (N. Nwakpa, personal communication, December 11, 2025).

CHALLENGES OF SAND MINING INDUSTRY AND PRODUCTION

Amidst a host of other challenges, the absence of modern machines and a mechanised approach to mining sand adversely affected the scale of production. Manual and unskilled labour with the use of local tools characterised sand mining and production. These processes that consisted of labour-intensive activities of using local tools as head-pan, shovel, and canoe distorted the scale of production or quantity of sand obtained from rivers. Use of these tools makes the work so laborious that mine workers almost get completely exhausted during and after work.

Poor transportation network in the area affected the industry during the period under study. Most roads leading to beaches were devastated and impassable. This circumstance obstructed the rate of turnover in some beaches. There were evidences of tippers and trucks that were trapped for days on such roads. Sometimes, the sand was lost in the course of trying to pull out the trapped vehicles. In this regard, the people recorded low patronage, resulting in poor realisation of profit in the enterprise up to the first decade of the 20th century. With the emergence of Martin Nwancho Elechi-led administration (2007-2015) and his investment in construction of unity bridges, certain areas of sand mining sites (beaches), such as Azuebonyi Idembia, Ndibe, Ukawu, Isinkwo, among others were connected (M. Onu, personal communication, December 11, 2025). These unity bridges supported sand mining industry, thereby presenting an opportunity for increasing access to the product. Yet, the violated and impassable roads which were unattended to undermined the expected success.

Conflicts combat against the industry in the state. People keep out environments that threaten lives and property. Abandoning sand mining enterprise in conflict prone areas is common among the people of Ebonyi State. It usually occurred in forms of disagreement, and inter or intra-communal war. The Isinkwo-Abaomege war for example, adversely affected the enterprise in Isinkwo and Ukawu beaches in the state up to 2023. Intra-communal conflict halted sand mining in communities of Ummunwagu Idembia and Akpoha in 2020. In a case of disagreement and

misunderstanding, members of tipper drivers association maintained a rule of ceasing operations in the crisis-prone environment. This implied that miners and their workers had their job threatened. Those that depended mainly on the enterprise suffered (T. Ogodo, personal communication, December 11, 2025).

Flooding affected the industry in the state. This occurred during rainy seasons as a result of either heavy rainfall. It resisted sand mining, thereby resulting in scarcity of sand in the state. Sometimes, heavy rainfall is required to support increasing accumulation of sand in rivers. On the contrary, if it persists, it prevents sand miners from mining to avoid the risk of getting drown. This circumstance made sand mining a seasonal enterprise in the state (Giadom & Akpokodje, 2016). It further, stimulated people to resort to storing large heaps of sand during the dry season. It is however, the stored sand that was distributed to support construction in the state during rainy season when sand mining met stiff restriction due to heavy rainfall and flood. Sand users as well, depended on sand obtained from weathered bed rocks from neighbouring state of Enugu. These conditions led to increase in price of the product during the period.

In some beaches, it is believed that marine agents (*moo mmiri*) prevented mining of sand. The agents were believed to be responsible for increase in the rate of cases of drowning in some beaches. Such beaches were abandoned, leaving accumulated sand unexploited for human use. Of course, the earlier identified means of appeasing the agents worked, but in some places, miners and their workers believed that conducting the required rituals was idolatry (T. Ogodo, personal communication, December 11, 2025). As Christianity established, they feared being addressed as unbelievers or being sanctioned by their churches. To that effect, they quietly abandoned mining in such beaches.

WAY FORWARD

The industry requires to be mechanised. This could be supported by individual entrepreneurs and government. Government is expected to provide sand miners with modern machines or subsidise the cost of procuring them and engaging services of skilled workers to facilitate their maximum use. This would stimulate an increase in scale of outputs, leading to wholesome transformation in the industry. Mechanisation of the industry would shape the industry to become operational at all seasons. In this regard, the enterprise would emerge more attractive to people, through increasing income generation by both individuals and government.

The enterprise requires development of road infrastructure to encourage access to beaches and distribution of output. Investment in road construction would promote among other things, development in sand mining vocation. The rate at which trucks and tippers break down along the roads would be drastically reduced, thereby

improving the profitability of the industry. This could be achieved through tying and linking community roads to the major roads in the state. The road construction could begin with communities that host sand mining sites. The David Nweze Umahi-led administration supported the unity bridges of Elechi-led government to open up different community roads.

Peace promotes cooperation, unity of purpose and development in any given environment. Ensuring peace and security in business areas should be prioritized. In communities that host mining sites, their critical stakeholders and neighbours should collaborate government to ensure peace and security at all costs. If the host communities are peaceful, miners, workers and customers, such as tipper drivers shall be attract to their sand mining sites.

No doubt, esoteric powers exist and operate on earth. Rituals that are known to have handled such situation of appeasing the said-marine agent should always be observed. The sacrifices should not be neglected provided, it is believed to encourage success and security of lives (mine workers). Even in the scripture, Mark 12:17, Jesus Christ declared at one time that what belongs to Caesar should be given to Caesar, to God what belongs to Him (New International version, 2011, Mark 12:17). All these will generally underscore the place of the industry in the economy of Ebonyi State.

CONCLUSION

The study acknowledged that rivers and river areas are the major sources of sand (*nveja*) in Ebonyi State. While mining machine was later and scantily introduced to the industry, the product was mainly mined manually with local tools. Its mining activities are laborious and tasking. The product is extremely significant for construction and manufacturing, supporting other sectors of the economy, but its mining activities resulted in certain negative effects. However, mechanising the industry, and investing richly in road infrastructure would transform the enterprise to become all-seasons business, thereby enhancing the pace of economic growth development in the area. All these could be achieved with the support of responsible and development-oriented government.

REFERENCES

Attah, F. M., Abang, T. A., Okpa, J. T., Ofem, N. O., Dan, F. A. O., Nwadike, N. C., ... & Ajimase, A. A. (2023). Exploring the working conditions and performance of healthcare providers: The emerging market study. *Corporate Governance and Organizational Behavior Review*, *7*(3), 105-117.

Ekpo, M. E. (2025). Governing Through Algorithms: Ethical and Legal Implications of Technological Governance. *AMCU*.

Ekpo, M., & Alobo, E. Nigerian Companies and the Prohibition on Political Donations: A Paradigmatic Shift as a Panacea for Compliance. *International Journal of Advanced Engineering, Management and Science*, *4*(12), 268277.

Ekpo, M., Alobo, E., & Enyia, J. (2018). Impediments to the Development of a Strong Consumer Credit System in Nigeria. *World*, *5*(1).

Ekrami, Jahangir etal. (2021). Environmental Impact Assessment of Salt Harvesting from the Salt Lakes, *Journal of Environmental Health Science & Engineering,* Vol. 19, No. 1, 365-377. Doi:10.1007/s40201-020-00609-2.

Giadom, F. D & Akpokodje, E. G. (2016). The Impact of Sand Mining on Riparian Areas of Eyaa, Onne, Nigeria. *Journal of Environment and Earth Science,* Vol. 6, No. 5, 116-123.

Hirschman, Albert O. (1958). *The Strategy of Economic Development*. New Heaven CT: Yale University Press.

Ironbar, V. E., Ekwok, L. N., Ekpo, M. E., Ekpang, J. E., Ogri, E. U., Oko, B. A., ... & Achu, R. A. (2025). Utilization of Digital Resources for Learning by Students with Intellectual Disabilities in Southern Nigeria. *Journal of Intellectual Disability-Diagnosis and Treatment*, *13*(2), 237-253.

Mmonwuba, Nnaemeka Chibuzo etal. (2025). Comparative Strength of Concrete Made with Stone Dust Sourced as Fine Aggregate from Abakaliki Ebonyi and Nkwelle Azunakain Anambra State. *IPS Journal of Engineering and Technology,* Volume 3, Number 1, pp. 21-27. DOI:https://doi.org/10.54117/ijet.vlil.7.

Nabiebu, M., & Ekpo, M. E. (2025a). From Litigation to Arbitration? An Empirical Analysis of Dispute Resolution Trends in Nigeria's Oil and Gas Sector Post-Petroleum Industry Act (PIA) 2021. *Alkebulan: A Journal of West and East African Studies*, *5*(2), 109-118.

Nabiebu, M., & Ekpo, M. E. (2025b). The Legal And Regulatory Imperative For A Shared Telecommunications And Power Infrastructure Model In Nigeria's Oil And Gas Sector. *Journal of Rare Ideas*, *4*(1), 1-11.

Nabiebu, M., Agube, N., & Ekpo, M. E. (2025a). Reconciling International Climate Law and the Energy Charter Treaty through Integrative Interpretation in Arbitration. *Law and Social Justice in Society*, *1*(1), 1-13..

Nabiebu, M., Ekpo, M. E., & Agube, N. (2025b). Governing Cross-Border Data Flows: International Trade Agreements and Their Limits.

Nabiebu, M., Ijiomah, A., Ekpo, M. E., & Agube, N. (2025c). Harmonization vs. Fragmentation: The Struggle to Govern Cross-Border Data in Trade Agreements. *Advances in Law, Pedagogy, and Multidisciplinary Humanities*, *3*(1), 173-190

Nwosu, N., & Ajimase, A. (2016). FABULISTIC INSIGHTS INTO JUSTICE AND HUMAN DIGNITY AS DEPICTED IN LA FONTAINE'S FABLES

TRANSLATED INTO ENGLISH LANGUAGE. *GLOBAL JOURNAL OF APPLIED, MANAGEMENT AND SOCIAL SCIENCES*, *11*.

Obasi, Aja Nwa. (2014). *Uburu: The City of Salt Lakes,* Enugu: CIDJAP Publications. Ongele, F. Nwankwo. (2020). "A Study of Ezza Economy, 1600-2015" Ph.D. Thesis Submitted to the Department of HIR, ABSU.

Oben, B., Ajimase, A., & Umukoro, G. (2011). A socio-psychological reading of Camara Layé's The radiance of the king. *Calabar Journal of Liberal Studies*, *15*(1), 222-236.

Woolgar, Steve. (1991). The Turn to Technology in Social Studies of Science. *Science, Technology and Human Values*, Vol. 16, No. 1, 20-50. Doi: 101177/016224399101600102.