



## An Assessment of the Socio-economic effects of illegal Monazite Mining on Communities in Hong Local Government Area of Adamawa State, Nigeria.

<sup>1</sup>Innocent Musa <sup>2</sup>Ibrahim Dauda <sup>3</sup>TumbaBulus.

<sup>1</sup>Department of Economics, School of Art and Social Sciences, Adamawa State, College of Education, Hong.

<sup>2</sup>Department of Economics, School of Art and Social Sciences, Adamawa State College of Education, Hong.

<sup>3</sup>Department of Economics, School of Art and Social Sciences, Adamawa State College of Education, Hong.

Date of Submission: 08-01-2026

Date of Acceptance: 20-01-2026

### Abstract

This research work assessed the socioeconomic effects of illegal monazite mining on communities in Hong Local Government Area of Adamawa State, Nigeria. To achieve this objective, the study used primary data sourced from the six (6) District areas of the local government. The sample size used for the research was determined using Yamane's (1967) formula for sample size determination. Descriptive statistics were used to analyse the data, and the results showed that the people in the mining communities benefit from the illegal mining activities, because they have become a means of employment and a source of income. However, there were challenges, which include insecurity, health-related problems, academic challenges, and destruction of farm lands. The result also showed that the benefits from the illegal mining activities outweigh the challenges. Based on the findings of this study, the following recommendations are made: to mitigate some of the challenges and make the mining activity more rewarding and profitable to communities and the nation, the Federal or State Government should partner with the miners or take over the mining of monazite. There should be proper monitoring of the mining activities by the government to reduce the challenges faced by the miners and the farmers, which will also help reduce the influx of criminals into the area.

**Keywords:** Socio-economic effect, illegal Mining, Monazite.

### I. Introduction

Mining is a global economic activity; it has been around some many decades in many countries of the world. For instance, the mining sector has been a major source of revenue for the Government of Jordan since the establishment of the Jordanian Phosphate Mines Company (JPMC) and Arab Potash Company (APC) in 1953 and 1956,

respectively. During this period, the Jordanian industrial sector has been composed mainly of the "mining and quarrying" and related "manufacturing" sub-sectors (Rami, Gary & Awwad, 2016). In Africa, so many minerals are mined and have played a significant role in their development process, because many low and middle-income mineral-rich countries have experienced strong growth for a decade or longer, propelled by a rapid expansion of their mineral exports and a rise in prices of these commodities (McMahon, Joseph & Moreira, 2014).

Natural resource endowment is key to the socio-economic development of a nation; its availability and proper utilization drive the economy of a nation, which will lead to economic growth and development. This is because solid minerals are important sources of foreign exchange, rural development, employment generation, and a driver for other industries with immense socio-economic benefits (Widana, 2019). Nigeria is a country endowed with so many mineral resources and because of the availability, mining of solid minerals has been an occupation of people in some states in Nigeria, however, organized mining was carried out by expatriate miners only dates back to the early 1900s when tin ore and coal were discovered in Jos and Enugu. Immediately after independence in 1960, the mining industry witnessed sporadic growth. The exploitation of solid minerals such as Tin, columbite, and coal contributed significantly to Nigeria's economy; however, it declined at the dawn of the oil boom of the 1970s (Akper&Adediran, 2023). Mining, therefore, has been a source of income for the people even before independence. However, Petroleum, which is mined in the south-south region of Nigeria, became the driver of the Nigerian economy beginning from the early 1970s. Mining, in terms of occupation, is an occupation practiced privately by many Nigerians, next to agriculture and commerce, even though most



of the mining activities are done on a small scale and illegally.

In recent years, discoveries have been made, because some places where minerals are now found have become home to illegal miners, even for artisans from indigenes communities of historic mining places. Adamawa, and in particular Hong local government area, is where monazite is illegally mined. The mineral is found all over the Local government area, but the qualitative type is found in Kulinyi district, which has made Kala'a the headquarters of Kulinyi Development Area, a focal point where most of the miners are staying.

Hong Local Government area has a vast arable land located in the northern part of Adamawa state, which shares boundaries with Mubi and Maiha in the East, Michika and AskraUba in the North, Gombi in the west, and Song Local Government in the south. The main occupation of the people in this area is farming, and it has been the mainstay of the Local Government economy. Groundnut production, in particular, has played a great role in developing the area socially and economically. It is the proceeds from groundnut production that sponsored most of the indigenes of this area in schools, which has made the Local Government Area home to many professors in all fields of endeavor, and so many political figures. However, the discovery of Monazite has divided the minds of youths, as many are into mining instead of farming, and some farmlands are under threat because of mining activities. There is also fear of danger ahead, as a result of the influx of people from other areas in search of wealth.

The importance of illegal mining of monazite in the Hong Kong Local Government at a glance is imminent; however, despite the benefits, the mining activity has some challenges for the people, the environment, and the state of security, if the mining is not properly monitored and guided by the government. This work, therefore, is designed to assess the socio-economic effects of monazite illegal mining on mining communities in the Hong Local Government area.

Much research has been conducted by different researchers on illegal mining in Nigeria at different times to determine the effects it has on Nigeria's socio-economic development. But based on the available literature reviewed, little or no work has been done on the effects of illegal monazite mining, and specifically, "socio-economic effects of monazite illegal mining on mining communities in Hong Local Government Area." Therefore, to fill this gap, the study is designed.

## II. Review of Related Literature

### Concept of Monazite

Monazite is a primarily reddish-brown phosphate mineral that contains rare-earth elements. Due to variability in composition, monazite is considered a group of minerals with monazite-(ce) as the dominant member (Singh, 2021). Jian, Munling, and Birger (2024) also define Monazite as a phosphate mineral that is rich in light rare earth elements (LREE). It is commonly found in various rock types and is used as a reliable geochronometer to date magmatic and metamorphic rocks. It can also be found in hydrothermal mineral deposits and low-grade metasedimentary rocks.

### Concept of Illegal Mining

Illegal mining is a mining activity that is undertaken without state permission. It refers to any mining operation that does not comply with labor or environmental regulations (Thamrin, Nursanthy&Thamrin, 2025). This means it is the extraction of precious metals without following the proper procedures to participate in the mining business (Amosu& Adeosun, 2021). Also, Illegal mining is the extraction of precious metals without following the proper procedures to participate in legal mining activity. These procedures include permits and licenses for exploration of the land, mining, and transportation.

### Theoretical Framework

The work is anchored on the Natural Resource Curse theory, because the relationship between socioeconomic development and monazite Illegal mining in the Hong Kong local government can be better explained by the theory. To support this resource curse hypothesis, Sachs and Warner (1977), in Ajie et al (2019), concluded that countries with abundant natural resources have a tendency to grow more slowly in their economies than those without substantial natural resources. They concluded that, having controlled for many variables, mineral resources are found not to be important for economic growth, i.e., there is a negative relationship between resource abundance and economic growth. The theory is deemed sufficient to explain the phenomenon of monazite Illegal mining and its socio-economic effects on communities in the Hong local government area of Adamawa State, Nigeria.

### Empirical Review

Ihom (2017) examined how mining in Nigeria has been carried out and its value addition



as a tool for socioeconomic development. The study has taken a look at the solid minerals available in Nigeria, their current status of exploitation/exploration, the miners, and the level of value addition to the mined minerals. Based on the findings, the Government's posture has affected the exploitation and utilization of strategic solid minerals with the potential of bringing about socio-economic development in Nigeria. The paper has, however, noted socio-economic development in some parts of the country where mining activities are going on. The study noted that the lifestyle of the rural dwellers in the mining areas has been transformed, and economic activities in such areas have increased. The peasant miners in rural areas in the mining areas have had better earnings, and that explained why they still continue with their risky mining practices. The study discovered with chagrin that the key actors in the mining sector in Nigeria are peasant villagers, the Chinese, and a host of other illegal miners with just a little machinery to mine what they can. Much of the mining is done manually. At the end of the day, value addition is not there to maximize profit from the minerals. This current situation of mining in Nigeria has, no doubt, affected the socio-economic development of Nigeria as a country.

Idris et al(2018) examined the Socio-economic Impacts of Artisanal and Small-Scale Mining in Parts of Niger State, Central Nigeria. A questionnaire was used to source data, and based on the analysis, the result reveals that the activities of artisanal miners result in many devastating impacts on the environment, which include land degradation, pollution of soil and water, erosion, desertification, and waste disposal. The most obvious to any casual observer is the land degradation created by open mine pits. However, the most serious impact, which affects the health of the population, results from contamination of soils, surface water bodies, and crops the Potentially Toxic Elements (PTEs) such as lead, copper, zinc, together with arsenic, which has posed serious challenges to the health of the populace.

Amoah (2018) assessed the social and environmental impact of an illegal mining operation in River Pra and its impacts on the water production of Ghana Water Company Limited. A quantitative survey was designed and used and through the Statistical Package for Social Science (SPSS) IBM version 24, results of the study shows that land, water, air pollution and increased in water production cost are the main environmental impacts and social indicators such as employment, population increase and migration, economic and

business development, prostitution, crime, conflict, poverty issues, infrastructural development and prices of goods and services are the social impacts of illegal mining. The study recommends that regularization of the illegal mining with proper documentation be granted to the miners, and attention be paid to the massive unemployment situation.

Similar to Idris et al (2018), Oladimeji et al (2018) assessed the socio-economic impact of participation in mining and quarrying on poverty alleviation among rural farming households in Kwara State, Nigeria. A three-stage sampling technique was employed to arrive at the sample size of 177 farming households that were involved in quarry and mining. Data for the study were collected from the rural households with the aid of a structured questionnaire using an interview schedule and questionnaire administration. Descriptive and inferential statistics, as well as Foster-Greer-Thorbecke -FGT indices and stochastic dominance, were used to analyze the data obtained. The results of the decomposition of poverty reveal the socio-economic impacts of participating in quarrying and mining in the study area. The results also show that age, marital status, household size, and distance from home to quarry sites were the determinants of rural households' participation in quarrying and mining. The study concluded that the earnings from the quarrying can be used to offset income shortfalls during the fallow period. It is recommended that the mineral potentials in the rural areas should be harnessed and developed to cater to rural households that are left fallow during the off-farm season.

Widana (2019) reviews literature on socio-economic and political impacts of the extractive (mining) industry. The study reveals 27 different impacts (23 socio-economic and 4 political) associated with the industry. The socio-economic impacts found in literature are: income, employment, livelihood, poverty, exports, training and skills development, community development, service access, land and assets impacts, health, security, gender, safety and accidents, education and literacy, culture, child labor, impacts on tribal people, and agriculture. The four political impacts are: children's rights, corruption, human rights, and human trafficking. The lack of documented impact data for several operational mines is a crucial issue highlighted in the review. Though it is a requirement for all mining companies to report such data, the review reveals that this requirement is hardly adhered to. Inadequate mining monitoring is to be blamed for the lack of data and documentation.



Ericsson and Löf. (2019) examined the contribution of mining to national economies between 1996 and 2016; the results contradict the widespread view that mineral resources create a dependency that might not be conducive to economic and social development. In addition, this study used available socio-economic indicators for African mineral-rich countries to measure socio-economic developments. The results of the survey concluded that mining countries perform better than oil-producing countries and non-mineral countries in Africa as measured by these indices of human development and governance.

Samuel (2023) examined the impact of illegal mining on the economy of Ghana and its overall development trajectory. The study focuses on the adverse effects of illegal mining, including environmental degradation, social instability, governance challenges, and lost revenue. It explores the interconnectedness of these impacts and their implications for sustainable development goals. The review reveals that illegal mining hampers economic growth by undermining formal mining activities, reducing investor confidence, and limiting government revenue. It highlights the detrimental effects on key sectors such as agriculture, tourism, and infrastructure. The environmental consequences, including deforestation, water pollution, and soil degradation, also pose long-term challenges for sustainable economic development. Additionally, the review identifies governance gaps and regulatory weaknesses as key drivers of illegal mining in Ghana. Inadequate enforcement, corruption, and weak institutional frameworks contribute to the persistence of illegal mining activities. These factors erode the rule of law and hinder effective resource management, posing obstacles to sustainable development. The study recommends the following. It emphasizes the need for enhanced regulation, enforcement, and institutional capacity building to curtail illegal mining activities and promote responsible mining practices. Strengthening governance frameworks, engaging local communities, and fostering partnerships with international stakeholders is vital for sustainable economic growth and development. By shedding light on the multifaceted impacts of illegal mining, this systematic review provides valuable insights for policymakers, researchers, and stakeholders. It underscores the urgency of taking concrete actions to combat illegal mining and create an enabling environment for responsible and sustainable mining practices in Ghana.

Akper and Adediran (2023) examined the Socio-economic and Community Issues in Mining:

Issues and Challenges for Nigeria. The study adopts the doctrinal research methodology of research to examine the social and community issues affecting mining communities in Nigeria and the policy and legal measures adopted to address identified challenges, to find out whether the measures adopted are efficacious and follow international standards and best practices. The study found that there are indications that appropriate policy measures consistent with international best practices have been adopted, but practical implementation has lagged, thereby limiting their impacts and success rate. The study concludes that faithful implementation of these policy measures is key to achieving success in addressing the socio-economic and community issues in Mining in Nigeria.

Yunana and Banta (2024) examined the socio-economic effects of illegal mining activities in Atang District of Jema'a Local Government Area, Kaduna State. Primary data for the study were obtained from a total sample of 97 through random sampling techniques by application of structured questionnaires and personal observations. Descriptive statistical tools such as frequencies, percentages, and tables were used to analyze the data obtained from the questionnaire. The result indicated that the illegal mining activities in Atang District brought about some benefits, like building new houses, marrying new and additional wives, and improving the standard of living of the communities with the money realized from illegal mining. On the negative side of the illegal mining in Atang District include the loss of good land due to erosion, land crises, loss of animal and human lives in the mining pits, loss of soil fertility, drunkenness, drug addiction, and social harassment. Hence, their studies were conducted only in North-Central, while this study will extend to the North-East part of the state.

### III. Methodology

The study adopts a descriptive survey research design; this is to enable the researcher to examine the challenges that need responses from large numbers of respondents.

The target population of the study comprises six (6) Districts in the Local Government area, which include Hong District, Hildi District, Uba District, Kullinyin District, Pella District, Gaya District, and Dugwaba District. The sample size was determined using Slovin's formula for estimation of sample size (n) from a population size (N) with a chosen margin of error (€). This formula is also referred to as Yamane's formula (Yamane, 1967). Which is given as:  $n = N / (1 + N(e)^2)$ ,



Where n is the sample size, N - the population under study, and e - the margin of error.

Data were sourced through the use of a structured questionnaire, and the responses from the

respondents were analysed using descriptive and inferential statistics.

#### IV. Results and Discussion

**Table 4.1 Benefits of Illegal Monazite Mining and Residents of Mining Communities**

S/N	Statement	SA (5)	A (4)	N (3)	D (2)	SD (1)	Total	Mean	Std Dev.
1	Illegal monazite mining has created job opportunities for local residents.	84 (21.99)	252 (65.97)	8 (2.09)	11 (2.88)	27 (7.07)	382 (100)	3.9293	0.99486
2	Mining has attracted traders and other economic activities to the area.	149 (39.01)	202 (52.88)	4 (1.05)	8 (2.09)	19 (4.97)	382 (100)	4.1885	0.94803
3	Illegal mining activities have increased household income.	76 (19.90)	230 (60.21)	38 (9.95)	15 (3.92)	23 (6.02)	382 (100)	3.8403	0.98713
4	Illegal monazite mining has led to development of infrastructure (e.g. road, electricity).	38 (9.95)	180 (47.12)	27 (7.07)	68 (17.80)	69 (18.06)	382 (100)	3.1335	1.32826
5	Youth involvement in mining has reduced unemployment in the community.	107 (28.01)	233 (60.99)	15 (3.93)	4 (1.05)	23 (6.02)	382 (100)	4.0314	0.96340

**Note: Figures in Parenthesis Represent Percentage (%)**

**Source: Field Survey, 2025**

Table 4.1 shows 336 (84 and 252) representing 87.96% (21.99% and 65.97%) opined that illegal monazite mining has created job opportunities for people living in the mining communities, 38 (11 and 27) representing 9.95% (2.88% and 7.07%) disagreed, while 8 (2.09%) were neutral. The mean of 3.9293, which is associated with the cluster standard deviation of 0.99486, confirms that illegal monazite mining has created job opportunities for local residents.

Mining has attracted traders and other economic activities to the area, 351 (149 and 202) respondents representing 91.89% (39.01% and 52.88%) agree, 27 (8 and 19) representing 7.06% (2.09% and 4.97%) disagree, while 4 (1.05%) were neutral. The mean of 4.1885 and the standard deviation of 0.94803, which is close to the mean, is evidence that mining has attracted traders and other economic activities to the area.

Regarding illegal mining activities have increased household income, 306 (76 and 230)

respondents representing 80.11% (19.90% and 60.21%) agree to this; however, 38 (15 and 23) representing 9.94% (3.92% and 6.02%) disagree, while 38 (9.95%) were neutral. The mean of 3.8403, which is associated with a low standard deviation of 0.98713, provides clear evidence to conclude that illegal mining activities have increased household income.

Recourse to the illegal monazite mining has led to development of infrastructure (e.g. road, electricity), 218 (38 and 180) respondents representing 57.07% (9.95% and 47.12%) consent with this fact, 137 (68 and 69) representing 35.86% (17.80% and 18.06%) hold a contrary view while 27 (7.07%) were neutral. The mean of 3.1335 and standard deviation of 1.32826, which shows a high dispersion, lend support to the 57.07% majority position that illegal monazite mining has led to the development of infrastructure.

Consideration of the youth involvement in mining has reduced unemployment in the



community. 340 (107 and 233) respondents representing 89% (28.01% and 60.99%) agree to the reduction, 27 (4 and 23) representing 7.07% (1.05% and 6.02%) hold a contrary opinion, while 15 (3.93%) were indifferent. On the strength of the mean of 3.3012, which is associated with a high standard deviation of 1.11110, it can be concluded

that the youth involvement in mining has reduced unemployment in the community.

A close consideration of the foregoing analysis on all the issues raised, there are perceived benefits of illegal monazite mining to the residents of mining communities in Hong Local Government Area of Adamawa state.

**Table 4.2 Challenges Faced by Mining Communities and Illegal Monazite Mining**

S/N	Statement	SA (5)	A (4)	N (3)	D (2)	SD (1)	Total	Mean	Std Dev.
1	Illegal monazite mining has caused serious damage to farm lands and reduced agricultural productivity in the area.	127 (33.25)	195 (51.05)	26 (6.81)	19 (4.97)	15 (3.92)	382 (100)	4.0366	0.98744
2	The presence of illegal monazite mining has led to health-related problems.	80 (20.94)	226 (59.16)	38 (9.95)	19 (4.97)	19 (4.97)	382 (100)	3.8534	0.97984
3	Farming activities have been disrupted due to illegal mining.	119 (31.15)	175 (45.81)	61 (15.97)	12 (3.14)	15 (3.92)	382 (100)	3.9634	0.98744
4	Illegal monazite mining has led to conflict and insecurity in the community.	96 (25.13)	165 (43.19)	76 (19.90)	30 (7.85)	15 (3.92)	382 (100)	3.7696	1.04458
5	Education of children has been negatively affected by mining activities.	139 (36.39)	152 (39.79)	53 (13.87)	19 (4.97)	19 (4.97)	382 (100)	3.9764	1.07316

**Note: Figures in Parenthesis Represent Percentage (%)**  
**Source: Field Survey, 2025**

Table 4.2 shows that 322 (127 and 195) respondents representing 84.30% (33.25% and 51.05%) agree that illegal monazite mining has caused serious damage to farm lands and reduced agricultural productivity in the area, 34 (19 and 15) representing 8.89% (4.97% and 3.92%) disagree, while 26 (6.81%) were neutral. The mean of 4.0366 is a basis to conclude that illegal monazite mining has caused serious damage to farmland and reduced agricultural productivity in the area. The standard deviation of 0.98744 is cluster and indicates that there is low dispersion in the respondents' views.

The presence of illegal monazite mining has led to health-related problems. 306 (80 and 226) respondents representing 80.10% (20.94% and 59.16%) agree to this fact, 38 (19 and 19) representing 9.94% (4.97% and 4.97%) disagree, while 38 (9.95%) were neutral. However, the mean of 3.8534, which is associated with a low standard deviation of 0.97984, suggests that the presence of

illegal monazite mining has led to health-related problems.

Regarding farming activities have been disrupted due to illegal mining, 294 (119 and 175) representing 76.96% (31.15% and 45.81%) agree, 27 (12 and 15) representing 7.06% (3.14% and 3.92%) disagree, while 61 (15.97%) were indifferent. The mean of 3.9634 and the low standard deviation of 0.98744 are a premise to conclude that farming activities have been disrupted due to illegal mining.

On the illegal monazite mining has led to conflict and insecurity in the community, 261 (96 and 165) respondents representing 68.32% (25.13% and 43.19%) opined so, 45 (30 and 15) representing 11.77% (7.85% and 3.92%) disagreed, while 76 (19.90%) were neutral. The mean of 3.7696 affirms the 47.49% position that illegal monazite mining has led to conflict and insecurity in the community. However, the standard deviation of 1.04458 is high



and indicates the presence of dispersion in the respondents' views.

On whether the education of children has been negatively affected by mining activities, 291 (139 and 152) respondents representing 76.18% (36.39% and 39.79%) hold this view, 38 (19 and 19) representing 9.94% (4.97% and 4.97%) object to the view, while 53 (13,87%) chose to remain indifferent. On the strength of the mean of 2.9305, it is clear that the education of children has been negatively affected by mining activities. The standard deviation of 1.52085 is high and indicates the presence of dispersion in the respondents' views.

A close look at all the issues analyzed revealed that there are socioeconomic challenges faced by communities as a result of illegal monazite mining in Hong Local Government Area of Adamawa State, which may have long-term effects on the overall development of the community.

#### Test of Hypotheses

The three hypotheses were tested by the study. From Tables 4.5, 4.6, and 4.7, the results of the correlation coefficients and t-statistics were presented.

**Table 4.3 Benefits of Illegal Monazite Mining to the Residents of Mining Communities**

			1	2	3	4	5
Spearman's rho	1	Correlation Coefficient	.000***	.030**	.088*	.083*	.026**
Spearman's rho	1	Sig. (2-tailed)	.632	.324	.253	.132	.754
Spearman's rho	1	N	382	382	382	382	382
Spearman's rho	2	Correlation Coefficient	.030**	.000***	.024**	.024**	.039**
Spearman's rho	2	Sig. (2-tailed)	.634	.437	.523	.834	.432
Spearman's rho	2	N	382	382	382	382	382
Spearman's rho	3	Correlation Coefficient	.088*	.024**	.000***	.088*	.082*
Spearman's rho	3	Sig. (2-tailed)	.536	.834	.427	.234	.834
Spearman's rho	3	N	382	382	382	382	382
Spearman's rho	4	Correlation Coefficient	.083*	.027**	.088*	.000***	.076*
Spearman's rho	4	Sig. (2-tailed)	.235	.734	.986	.642	.526
Spearman's rho	4	N	382	382	382	382	382
Spearman's rho	5	Correlation Coefficient	.026**	.039**	.082*	.076*	.000***
Spearman's rho	5	Sig. (2-tailed)	.534	.152	.426	.111	.321
Spearman's rho	5	N	382	382	382	382	382
Spearman's rho	5						

\* Correlation is significant at the 0.10 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

Table 43 above shows that the t-statistics of all the items are positive, and the majority are above 0.5 percent, which indicates a positive relationship among the items. The correlation coefficient of all the items showed significance at 1%, 5% and 10% significance levels. This shows that there is a positive and statistically significant relationship

between the benefits of illegal monazite mining and the Residents of Mining Communities. The null hypothesis 1, which states that Illegal monazite mining does not provide significant economic benefits to residents of mining communities in the Hong Local Government Area of Adamawa State, is therefore rejected.



**Table 4.4 Challenges Faced by Mining Communities as a Result of Illegal Monazite Mining**

			1	2	3	4	5
Spearman's rho	1	Correlation Coefficient	.000***	.052*	.053**	.014**	.023**
Spearman's rho	1	Sig. (2-tailed)	.835	.586	.935	.426	.197
Spearman's rho	1	N	382	382	382	382	382
Spearman's rho	2	Correlation Coefficient	.052*	.000***	.048**	.011**	.011**
Spearman's rho	2	Sig. (2-tailed)	.783	.836	.523	.648	.527
Spearman's rho	2	N	382	382	382	382	382
Spearman's rho	3	Correlation Coefficient	.053*	.048**	.001***	.041**	.045**
Spearman's rho	3	Sig. (2-tailed)	.735	.426	.935	.373	.724
Spearman's rho	3	N	382	382	382	382	382
Spearman's rho	4	Correlation Coefficient	.014**	.014**	.041**	.033	.054**
Spearman's rho	4	Sig. (2-tailed)	.523	.723	.726	.273	.363
Spearman's rho	4	N	382	382	382	382	382
Spearman's rho	5	Correlation Coefficient	.023**	.011**	.045**	.054**	.032
Spearman's rho	5	Sig. (2-tailed)	.634	.537	.438	.835	.327
Spearman's rho	5	N	382	382	382	382	382
Spearman's rho	5						

\* Correlation is significant at the 0.10 level (2-tailed)  
 \*\* Correlation is significant at the 0.05 level (2-tailed)  
 \*\*\* Correlation is significant at the 0.01 level (2-tailed)

From Table 4.4 above, the t-statistics of the majority of the five items are above 0.5 and positive, which shows a positive relationship between the challenges faced by mining communities and illegal monazite mining. The correlation coefficient of all five items also showed significant at 1%, 5% and 10% significance levels. This implies that there is a positive and significant relationship between the challenges faced by mining communities and illegal monazite mining. Based on these premises, the null hypothesis two, which states that communities engaged in illegal monazite mining in Hong Local Government Area do not face significant challenges, is rejected.

### V. Discussion of Findings

The major objective of the study is to assess the socioeconomic effects of illegal monazite mining on communities in Hong Local Government Area of Adamawa State, Nigeria. The overall result shows that there are socioeconomic effects of illegal monazite mining on communities in the Hong Local

Government Area of Adamawa State. SPSS 21 was used to analyze the socioeconomic effects of illegal monazite mining on communities in the Hong Local Government Area of Adamawa State.

The first objective of the study was to identify the perceived benefits of illegal monazite mining to the residents of mining communities in Hong Local Government Area of Adamawa state. Using Descriptive statistics to analyze the data obtained, the result indicates that perceived benefits have a positive and significant relationship with illegal monazite mining. This shows that an increase in illegal monazite mining will lead to an increase in benefits received by the communities. Therefore, the null hypothesis, which states that illegal monazite mining does not provide significant economic benefits to residents of mining communities in the Hong Local Government Area of Adamawa State, was rejected. The result is in line with Amoah (2018), Ericsson, and Löf. (2019) and Yunana and Banta (2024) established a positive and significant



relationship between perceived benefits and illegal monazite mining.

To achieve the second objective of the study, which was to investigate the socioeconomic challenges faced by communities as a result of illegal monazite mining in Hong local Government Area of Adamawa State. The result of the study reveals that the socioeconomic challenges and illegal monazite mining have positive and significant relationships. Therefore, the null hypothesis, which states that communities engaged in illegal monazite mining in Hong Local Government Area do not face significant challenges, is rejected. This result is in line with the findings of Ihom (2017), which found positive relationships between socioeconomic challenges and illegal monazite mining.

## VI. Conclusion and Recommendations

In conclusion, this study has achieved its objectives by addressing the socioeconomic effects of illegal Monazite mining in Hong Local Government Area of Adamawa state. The result of the study showed that the communities where the mining activities are taking place benefit both economically and socially; however, there are some socioeconomic challenges. This study, therefore, can provide valuable insight and can serve as a foundation for further studies.

Based on the findings of this study, the following recommendations were made:

1. The government should partner with, or take over, the mining of monazite in the Hong Local Government Area, as this would generate increased revenue for the government and create employment opportunities for the growing youth population in the area.
2. Effective government monitoring of mining activities is necessary to minimize the challenges experienced by mining communities.
3. Committees should be constituted by the community leaders to monitor the revenue generated from illegal monazite mining, with the aim of promoting community development.

## References

- [1]. Ajie, C.O., Okoh, S.A., &Ojiya, E.A (2019).The Impact of solid minerals resources on economic growth in Nigeria.*International Journal of Humanities, Art and Social Studies (IJHAS)*, 4(1); 43 - 57
- [2]. Akper, P.T. &Adediran, A. (2023).Addressing the Socio-Economic and Community Issues in Mining: Issues and Challenges for Nigeria.<https://www.researchgate.net/publication/369375070> Addressing the Socio-Economic and Community Issues in Mining Issues and Challenges for Nigeria
- [3]. Amoah, J. K. (2018). Assessed the Social and Environmental impact of illegal mining operations in River Pra: A case study of Ghana water company. *Projects in Daboase*.
- [4]. Amosu, C.O. & Adeosun, T. A. (2021).Curtailling illegal Mining operations in Nigeria. *International Journal of Advances in Engineering and Management (IJAEM)* 2(12); 121-129.
- [5]. Ericsson, M. &Löf, O. (2019).Mining's contribution to national economies between 1996 and 2016. *Miner Econ* 32, 223–250.<https://doi.org/10.1007/s13563-019-00191-6>
- [6]. Ihom, P. A. (2017). Mining in Nigeria: value addition a valuable tool for socio-economic development. Paper presented at the Nigerian Society of Engineers, Metallurgical Mining and Mineral Division National Conference/AGM held in Jos.
- [7]. Idris-Nda, A., Waziri, M. N., Bida, D. A.&Abdullahi, S. (2018). Socio-economic impact of Artisanal and small-scale mining in parts of Niger state, central Nigeria.*International Journal of Mining Science (IJMS)* 4(3); 21 – 30
- [8]. Jian, Z., Munling, J. R., & Birger, R. (2024).Geochemistry of low-temperature (<350°C) metamorphic and hydrothermal monazite.*Earth-science reviews Vol 249*.
- [9]. McMahan, G., Joseph, R.&Morein, S. (2014). The contribution of the Mining sector to socio-economic and human development (1(30) Washington, D. C, World Bank Group.
- [10]. Oladimeji, Y. U., Adepoju, S. A., Galadima, S. A.&Fagge, A. M. (2018). Socio-economic impact of participation in mining and quarrying on poverty Alleviation among Rural farming Households in Kwara state, Nigeria.*Journal of Agriculture and Environment* 14(2); 17– 29.
- [11]. Ogunnowo, R. O.& Vector, O. (2023). Illegal Gold Mining and Sustainable Human Society in Osun State, Nigeria.*Journal of sustainable Development, law and policy* 14(2); 198 – 221



- [12]. Rami, A. R., Gary, C., &Awwad, T. (2016). The Socio-economic impacts of mining on local communities: The case of Jordan. <https://doi.org/10.1016/j.exis.2016.02.001>
- [13]. Samuel, A. Y. (2023). The impact of illegal mining on Economic Growth and Development in Ghana. *MPRA No. 117641*. <https://mpra.ub.uni-muenchen.de/117641>
- [14]. Singh, Y. (2020). Rare Earth element geochemistry of Monazites from beach sand deposits of Indian coasts: Implications for clean energy. *Journal of Applied Geochemistry* 22(3); 209 - 220.
- [15]. Thamrin, H., Nursanthy, A. T.R., &Thamrin, M. A. (2025). Law Enforcement Against Illegal Miners. *Awang Long Law Review*, 7(2), 503 – 507.
- [16]. Widana, A. (2019). The impact of the mining industry: a review of Socio-economic and political impacts. *SSRN Electronic Journal*
- [17]. Yamane, T. (1967). *Statistics: An Introductory Analysis* (2nd ed.). New York: Harper & Row.
- [18]. Yonana, M. A.& Banta, A. (2024). Socio-economic effects of illegal Mining activities in Antang District of Jemaa Local Government Area, Kaduna State. *Journal of Environmental sciences and resources management* 6(2); 12 – 21.