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Impact of Tin Mining on Students' Educational Attainment in Nasarawa Eggon Area, Nasarawa State: A Historical Analysis

[1]Dr. Moga Ezekiel; [2]Bashama Kaze Akwanga; & [3]Umbugu Joel Alhaji

[1]Department of Arts Education, Faculty of Education, Nasarawa State University, Keffi. [2]Department of History and Diplomatic Studies, Faculty of Arts, Nasarawa State University, Keffi. [3]Nasarawa State Ministry of Education, Science and Technology, Lafia

Corresponding Author: mogaezekiel@nsuk.edu.ng

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Abstract

The paper examines the impact of tin mining on students' educational attainment in Nasarawa Eggon area of Nasarawa State, Nigeria. Drawing on archival materials, oral interviews, field observations, and existing scholarly literature, the study traces the evolution of tin mining activities in the area from the early colonial period to the present. The paper notes that while tin mining stimulates local economic activity and provides alternative livelihood opportunities, it also generates long-term social and educational consequencesto students' educational attainment in the area.Findings of the study revealed that the proliferation of informal mining practices in the area has led to increased child labour, reduced school enrolment and deteriorating educational facilities. The study concludes that improving educational attainment in Nasarawa Eggon area requires integrated policies that favour educational advancement and ensure sustainable community growth in the area.

Keywords: Tin mining, students, educational attainment, Nasarawa Eggon, Nigeria

Introduction

Tin mining has played a significant role in Nigeria's economic history particularly across the central highlands encompassing Plateau and Nasarawa States. Historically, tin was one of the Nigeria's foremost export commodities before the oil boom of the 1970s (Foramfera,2016). Despite its economic potential, the unregulated and labour-intensive nature of mining in areas such as NasarawaEggon has brought about several issues of concern. According to S.L.Kunza (personal communication, October 30, 2025), one of such most conspicuous and pressing issues is the disruption of formal education, as many children abandon school to engage in mining activities.

Among the various minerals found across the country, tin holds particular historical and economic importance. Tin mining in Nigeria dates back to the early 20th Century, when colonial authorities and European mining companies began exploring and exploiting deposits across regions such as the Jos Plateau and part of the present-day Nasarawa State(S.L.Kunza, personal communication October 30, 2025).

The introduction of mining activities in Nasarawa Eggon area provides employment opportunities and also attracts labour migration into the area. However, while mining has boosted local income and commerce, its broader socio-economic impacts-particularly on education- are often overlooked. Most worrisome is the increasing labour-intensive nature of tin mining, in addition to environmental degradation, health risks, and income instability, which have significantly contributed to disruptions in family life and children's educational participation(Nwosu, 2022).

Education serves as a fundamental instrument for human and societal advancement. Yet, in many mining communities, the pursuit of formal education often competes with the immediate economic needs of households (Fayemi e tal, 2025). This is evidenced on the ground that in Nasarawa Eggon Area, families who engage in tin mining nearly prioritize short-term financial gains over long- term educational investment. The implication is that, many children face irregular school attendance, early dropout, and poor academic performance (A. Eggah and others, personal communication, September 29, 2025). Moreover, the environmental consequences of mining-such as land degradation, erosion, and water contamination further undermine educational infrastructure and access to learning facilities.

In this regard, conducting a historical analysis of tin mining in Nasarawa Eggon area is essential to understand how mining activities have evolved in the locality and how they continue to influence students' educational trajectories. By tracing the development of tin mining practices and examining their socio-economic and environmental effects, this study aims to establish a link between exploitation and educational outcomes.

The paper is divided into the following segments; introduction,, geographical location of NasarawaEggon Area, Historical context of tin mining in Nasarawa Eggon Area, impact of tin mining on educational

attainment of students, and conclusion.

Location and Geographical Setting

According to Moga (2024), geography organizes space, location, place, human beings and the environment. It provides understanding for interrelationships between people and their environments and reveals how humans depend on the environment andalso demonstrates human ability to modify and adapt to the environment for their basic needs such as; food, shelter and clothing. Geography shows how the environment of a particular area with its physical features, and natural resources play a determining role in the culture evolved by a people in the locality.

Nasarawa Eggon Area is the geographical nucleus of the Eggon. It was part of the former Akwanga Division which comprised Akwanga, Wamba and Nasarawa Eggon District under Nasarawa and later Palteau Province during the Colonial period. Nasarawa Eggon Area was carved out of Akwanga LGA of the then Plateau state by the Military Regime of Major General Ibrahim Badamesi Babangida in 1991 as part of Government policy in bringing government to the grassroot (Akere, 2019).

NasarawaEggon Area lies between latitudes 8^0 42' 13" and 8^0 45' 00 N and longitudes 8^0 30' 00" and 8^0 32' 10" E(Akere, 2019). According to a survey report, NasarawaEggon Area of Nasarawa State occupies an area approximately 800 square kilometres and is bounded to the West by Kokona and Keffi LGAs, to the South-East by the Lafia LGA and to the North by Akwanga and Wamba LGAs of Nasarawa State(NAK, 1924).

A unique feature of the area is the presence of mountainous-outcrops called the "Eggon Hills". The Eggon Hills formed the original settlement of the people of Eggon before their contact with the European in 1907(NAK,1924). The Hills also formed watershed between the basins of Mada River to the West and Arikya River to the East. Both Rivers flow in a general southerly direction with the former meeting the River Benue West of Makurdi and the latter West of Ibi(Awu, 2021). The two rivers are also seasonal in nature as they rise rapidly in volume during the rainy season but become virtually empty during the dry season.

According to A.Kigbu (personal communication, November 18, 2025), since earliest time, the name Eggon has been interpreted by the people of Eggon as a people and the language they speak. Unlike the Eggon who called themselves Eggon as a people and language they speak since earliest time, the Hausa traders erroneously addressed the people of Eggon as MadaDutse (Hill Mada) and Mada people of Andaha who were rather neighbours in the then Akwanga Area as Mada kasa (plain mada). The Mada Dutse and MadaKasa were and arestill two distinct ethnic groups who speak entirely different dialects. According to A.Kigbu (personal communication, November 18, 2025), the British authorities who came in contact with the Eggon in the early part of the twentieth centuryadopted the name (madadutse) already in use by the Hausa traders.

Before the colonial presence inNasarawa Eggon area in the early twentieth century, the Eggon were grouped into three major clans namely: Anzo, Eholo and Eggon Ero. The Anzo

comprised; Alogani (Oghen), Wakama, Ogba, Ogbagi, Agunji, Ogen, Agbaku, Galle and Ezzen. Eholo comprised; Wana, Agibi, Aboshon, Alushi, Ginda, Awolege, Ozzi, Lambaga, Arikpa, Agbashuru and Wuza. The Eggon Ero included; Alizaga, Umme, Ladama, Bakyono and Arugbadu.

The three clans still speak the same language, though with some dialectal differences characterized by pronunciation. For example, while the Anzo and Eholo clans call head (*ishi*), the Eggon Ero add an I-sound (*Iishi*). The Eggon Eholo call ear, nose, woman, night, maize as (*otun, egala, ashe, chuchuku, aguluebo*) but the EggonEro call the aforementioned (*kotno, legala, akye, lyutyuku, koboro*). These disparities in pronunciation were and arenever impediments to mutual intelligibility as they were and are all considered speaking the same language and both groups understood and still understand each other(A.Kigbu, personal communication, November 18, 2025).

Historical context of Tin Mining in NasarawaEggon Area

Nigeria's tin mining industry dates back to the early twentieth century when the British colonial administration started commercial extraction of cassitente (tin ore) on the Jos Plateau around 1905 (Nairaland, 2018). Nasarawa state which shares the same geological formation known as the younger granite complex, also possesses significant deposits of cassiterite, columbite and other associated minerals (Nairaland, 2018).

In NasarawaEggon area, tin mining dates back to the pre-colonial era, with indigenous communities engaging in artisanal mining practices. Ayokhai (2017) appreciates the evidence of tin mining in the area noting that the people of Eggon engaged in a range of extractive and resource based activities prior to and during early colonial periods. This was evidenced by small-scale extraction of gemstones, gravels, and locally useful minerals by hand methods-panning, digging shallow pits, and hand-sorting pegnatites which was for long practiced in the region as part of household livelihoods and seasonal labour strategies. Ayokhai(2017) futher notes that these activities were typically informal, as they were family-based and integrated with farming cycles rather than driven by external commercial demand.

According to L.S.Kunza (personal communication, October 30,2025), even though geological surveys of the area by the colonial authorities identified deposits of baryte, galena, and quarts in the surrounding plains of the Eggon area in the early 1900s until this time, the Eggon were already involved in mining.

L. S.Kunza (personal communication, October 30, 2025) identifiedearly miners in theEggonArea to include: Offor Owun Attah, Awumo and few miners who were not of Eggon extraction notably; Yaro (Tiv) and Baba (Hausa). L. S. Kuzan (personal communication, October 30, 2025) further stressed that the British colonial administration onlyrecognized the mineral potential of the area through geological surveys which saw the establishment of formal mining operations.

On why only few people of Eggon were involved in mining activities in the early times, L. S.Kunza said, land then was fertile and the Eggon people concentrated more on the production

of food crops and groundnut which was considered a cash crop during colonial period with which the people of Eggon off set their tax. This is unlike the recent times where almost every household is involved in the mining of tin to meet their daily needs, a consequence of the depletion of soil fertility.

As time progressed particularly during the 1950s, tin production reached its peak as it became one of the country's most important foreign exchange earners (SCIRP, 2011). In NasarawaEggon area, mining emerged as one of the key livelihood strategy for local communities, particularly as mechanized mining declined after independence and the sector became dominated by artisanal and small-scale miners (Nasarawa State Government, 2023).

At Nigeria's independence in the early 1960s, mining in Nasarawa Eggon area became increasingly localized. The Federal Government limited presence in small-scale mineral regulation enabled artisanal and informal mining to flourish (Adewumi& Oni; 2021). With this development, local youths and farmers began to supplement agricultural incomes by engaging in dry-season mining in the area particularly galena(lead ore) and barite, both of which are abundant in the area. Ambo(2023)&Ewuga (2025) attest to this development as both authors upheld that a significant number of artisanal miners from different communities in Eggon area including Kagbu, Wakama, Alogani, and Galle, dug narrow shafts of up to ten(10) metres to reach ore-veins..

As mining activities expand, social consequences become more increasingly visible. Investigative reports and international press coverage in 2023-2025 exposed the emergence of child labour in several mining localities including communities within Nasarawa state(AP,2024,. Euronews, 2024., Business & Human Rights Resource Centre, 2024). The reports document young children who are engaged in manual digging, ore sorting and other hazardous tasks- practices driven by poverty, household need for cash, and the informal nature of many mining sites.

By the 1970s and 1980s, Nigeria's tin production began to wane due to declining ore quality, poor technology and growing dominance of oil revenue (Foramfera,2016).With this development, in Nasarawa Eggon area, mining activities witnessed a significant shift towards small-scale and informal operations, often involving families and school-agechildren seeking supplementary income.

According to R. Nasara and others (personal communication November 19, 2025), the tools commonly used for mining in Nasarawa Eggon Area include : **Basket,** used for washing/sieving the material to separate tin ore from unwanted particles. **Basin,** used for washing and panning tin-bearing soil.**Head pan**, used for carrying dug-out soil, and gravel and to transfer materials to washers or sluicing points. **Digger,** used for breaking, loosening, and digging up soil that contains tin ore.**Shovel,** used for scooping, loading, and transferring tin-bearing earth into washing basins, sluices, or head pans and for removing overburden top soil .



Tools used by miners in NasarawaEggon

Miners usually dig mining pits of 30- 35 feet deep, with gravel lifted using makeshift, pulley systems and buckets. Simple sluicing methods are used to wash and separate cassiterite from sand and gravel, a process that is physically demanding and often hazardous.

R.Nasara and others (personal communication November 19, 2025), further opined that tin mining activities are characterized by division of labour. While men dominate excavation, women and children frequently assist in washing and transporting ore.



Lead author observes miners as they sieve

The reliance on family labour is both an economic strategy and a consequence of poverty in mining communities. Children in particular contribute to production by conveying working tools to and fro the mining sites, fetching water, and sorting minerals.

The informal nature of mining activities have made regulation difficult. In Nasarawa Eggon area, many miners operate without official license. Illegal mining has become almost

widespread in the area. Commenting on why it is so, R. Nasara and others (personal communication November 19, 2025) revealed that, economic hardship force most miners to involve themselves in mining activities to meet up their daily bread, hence following the due process of registration to most of them is waste of time since their intention is to source for what they can solve their immediate problem.

From the 1990s onward, geological surveys and improved knowledge of the state's mineral endowment drew increased attention to Nasarawa state, including the Nasarawa Eggon area for its deposits of gemstones, barite, coal, and other solid minerals (Nasarawa State Government, n.d). Although, large-scale industrial mining remained limited, the late twentieth and early 21st centuries saw a steady increase in artisanal and small-scale mining (ASM) in Nasarawa Eggon area as miners exploited and still exploit accessible pegmatite veins and alluvial concentrations for gem-quality and industrial materials.

The 2010s and early 2020s witnessed yet a marked intensification of ASM across Nasarawa state, spurred by rising global demand for certain critical and industrial minerals particularly **lithium** in the broader state context, increased commodity prices, and greater flows of traders and middlemen, into the rural mining communities (AP,2024., Business & Human Rights Resource Centre, 2024). According to J.Akpavan during (personal communication , September 29, 2025), in Nasarawa Eggon Area, the influx of buyers of mined tin has translated into higher numbers of digging sites. J. Akpavan identified communities in Nassarawa Eggon Area that are involved in tin mining in recent times to include: Ongezi, Lizzin Keffi, Alhamis Ezzen, Lambaga, Arikpa, Galle, Alogani, Ubbe, Kagbu, Bakyono, Arugbadu, andBurum-Burum. When further asked during the personal communication with J.Akpavan (September 29, 2025) whether a part from the aforementioned communities in NasarawaEggon Area, tin mining takes place in other Local Government Areas in Nasarawa State, J. Akpavan cited Wamba, Akwanga, Nasarawa, Awe, and Keffi Local Government Areas to be involved in mining.

As earlier mentioned, the 21st century marks a significant increase in the number of buyers of mined tin in the area. Among the local buying agents of the tin ore are; Ayaka Umaru, Sandoo Audu, Envoh Yohanna, all of Eggon extraction resident in Nasarawa Eggon. Often time,the local buying agents buy the raw ores using their capital and sell same to middlemen who transport them to Lafia and Jos for processing (L.S.Kunza, personal communication October30, 2025).

When asked on the importance of tin ore mined from NasarawaEggon Area, a geologist A.Abashi (personal communication, November 1, 2025) revealed that historically, the tin mined from the Nasarawa Eggon Area was transported via the railway network that connected Jos to Port Harcourt and Lagos ports during the Colonial period. This according to A.Abashi was possible because the Eggon Area was part of the Jos province during the colonial period and was also part of Plateau State until October 1, 1996 that Nasarawa State was carved out as an independent State from Plateau State by the administration of General Sani Abacha.

However, in most recent times, most of the cassiterate mined in NasarawaEggon Area is exported in raw or semi-processed form to Asia countries such as China and Malaysia.
While commenting on the economic value of tin metal derived from cassiterite, A.Abashi said, the tin metal derived from cassiterite is used globally for tin-planting steel, producing bronze alloys, and as a major component in solder for electronics. However, in most recent time, tin is used as a source of renewable energy for the production of solar panels and semi - conductors.

Impact of Tin Mining on Students' educational Attainment

The proliferation of informal mining has adverse effects on educational attainment of students in Nasarawa Eggon Area. One of such effects is increased absenteeism and school drop-out. Mining activities in Nasarawa Eggon have drawn children away from school, resulting in reduced attendance, class repetition and eventual drop –out. For example, the immediate income from mining makes some students to permanently abandon school. Often time, when children believe that mining work yield higher income than education, the opportunity cost remaining in school becomes high. In a personal communication, October 27, 2025, with a fourteen(14) and fifteen(15) year dropped out A. Makayilu and A. Matthew who are victims of this ugly scenario unanimously stressed that we prefer mining to schooling because we make between thirty (30) and forty (40) thousand naira from mining every day. Even if we go to school, upon completion of study, we will still look for government work to be paid between eighty (80) and one hundred thousand(100) naira monthly. By and large, even in this Tawa Galle, we know of many applicants who completed their study from School of Health, College of Education, College of Agriculture, Polytechnic and even University that have not been employed by government. From what we are already seeing, why waste our precious time and cherished youthful age going to school ? Therefore, it is better for us to involve ourselves in tin mining that we can get plenty money at this our youthful age to buy Hajour Motor Cycle, correct car, build fine houses, marry and enjoy with our wives and children to be instead of going to school. We prefer mining to schooling, they stressed. Other negative impact associated with increased absenteeism and school drop-out are; reduced instructional hours as children skip classes to join mining pits. For example A. Makayilu and A. Matthew said " when we were in school, we used to attend school twice a week. On other days, we used to go to the mining sites." The effect is repetition due to irregular attendance which eventually leads to failure due to low grades. However, the motivation to skip classes for mining activities arises from the need to fund their education.
On parents, L. S. Kunza through (personal communication, October 30, 2025) said, community perception of education on economic benefits derived from mining have significant impact on students' educational attainment in Nasarawa Eggon Area. L. S. Kuzan reported that most parents place immediate financial gain over long-term educational development of their children. This shift has led to a devaluation of education in the area as most parents now prefer their wards working at mining sites than going to school because of daily financial returns to them by their wards.



From left to right,Picture of the lead author and school age children at the mining site during school hours.

In another dimension, the impact of tin mining could be seen from the perspective of poor academic performance. Thus, the involvement of children in hazardous mining activities have negativeimpact on students' poor academic performance. For example, it reduces time for homework, and study. It also results to fatigue due to hard labour that characterized mining activities. In a personal communicationon October 13, 2025 with K. Ombugadu and E. Musa who are JSS 1 students but are involved in mining, they said: after a day in pit, we return late and tired and we use to miss lessons the following day. This in turn affects our performance.

Lost future opportunities and lowered educational aspiration is another aspect of the impact of tin mining on educational attainment of students in Nasarawa Eggon Area of Nasarawa State. When mining becomes the preferable activity, educational aspirations by students may decline as students perceive further schooling as unnecessary. Lamenting his experience, A JSS 2 student A. Arigu said: I initially planned to complete my secondary education but along the line, my father discouraged me as he insisted that I should dig a mining pit until I buy a brand new motorcycle. According to my father, school is of no use. That was how I dropped out in JSS 2 and now involved in mining every day.

Another impact of mining on students' educational attainment in Nasarawa Eggon Area is the loss of agricultural livelihood and increased child labour pressure. Mining often encroaches on agricultural land or reduces agricultural productivity which in turn affects the income status of families from farming. In return, families may push their wards into mining work which reduces time for schooling. A. Obadiah, a JSS 1 student expressed his feelings in this way: miners have taking over my father's farm that he used to harvest eighty(80) bags of groundnut to pay our school fees, and cloth us. Since miners took over our farm, my father stopped me and my elder sister Hasssana from going to school as he has no means to pay our school fees.

Psychological stress and trauma due to hazardous mining environment.Undeniably, children who engage in mining may face heightened risk of accidents, exposure to dust, collapse of pits

that may result to death, all of which impose psychological and health burdens on the victims. Generally, work in hazardous environments, living in degraded and noisy landscapes, or witnessing accidents and community conflict related to mining undermine children's psychological well-being. Stress and trauma reduce concentration, participation and long-term education aspirations (World Bank, 2020).

Community social breakdown is another impact of tin mining on educational attainment of students in Nasarawa Eggon Area of Nasarawa State characterized by social problems like drug abuse, early pregnancies, exploitation and crime- which in-turn affect children's schooling. The implication for this is that the social environment becomes less safe and less conducive to schooling as students may drop out due to early pregnancy, drug abuse, and other related social crimes.

Conclusion

The study shows that tin mining in Nasarawa Eggon area has historically shaped students' educational attainment as school age children are drawn into labour, disrupting school attendance, and limiting academic progress. Addressing these challenges requires integrated strategies aimed atreducing reliance on artisanal mining, supporting vulnerable households and strengthening access to quality schooling.

Recommendations

Based on conclusion of the study, the following recommendations were made.

1. Nasarawa State Government and the authorities of Nasarawa Eggon Local Government Area should enforce stricter regulations to reduce environmental degradation, and unsafe mining practices that endanger students in the area.
2. The authorities of Nasarawa Eggon Local Government Area and Community leaders should collaborate to create programmes that support students' academic needs such as scholarship schemes, and provision of learning materials.
3. The authorities of Nasarawa Eggon Local Government Area should introduce skill acquisition centres to reduce dependence on mining and allow students to stay in school.
4. Community sensitization initiatives should emphasize long-term benefits of education by discouraging child labour and encouraging parents to prioritize schooling over mining income.
5. The authorities of Nasarawa Eggon Local Government Area should ensure that children of school age are protected from child labour through regular monitoring, enforcement of labour law, and penalties for violators.
6. Policymakers should develop and enforce local bylaws that mandate school attendance and discourage students' involvement in mining during school hours.

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