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RESEARCH ARTICLE

Assessment of Mining Sector Contribution to Federal Government of Nigeria Revenue From 2012 to 2020

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ABSTRACT

This study aims to assess the contribution of the Mining Sector to the revenue of the Federal Government of Nigeria. The mining sector is a significant component of Nigeria's economy, rich in substantial mineral resources. The primary objective of this study is to evaluate the mining sector's contribution to the revenue of the Federal Government of Nigeria. The specific objectives are to identify the factors responsible for the decline in the mining sector's revenue to the federal government and to make recommendations for enhancing the mining sector's contribution to the federal government's revenue. The population of this study comprises companies and government institutions in Nigeria's mining sector from 2012 to 2020. This study employs a quantitative method. The study utilizes inferential statistics, employing tools such as Simple Linear Regression analysis, including p-value, t-statistics, F-statistics, and R-square, to test the hypotheses. The findings reveal that the negligible contribution to the mining sector of the Federal Government of Nigeria can be attributed to various factors, including global commodity price fluctuations, economic downturn, regulatory and policy challenges. Unauthorized mining and smuggling, infrastructure deficiencies, as well as environmental concerns and regulations, are among the contributing factors. Enhancing the mining sector's revenue for the Federal Government of Nigeria necessitates strengthening regulatory and policy reforms, promoting local content development, investing in critical infrastructure, fostering robust community engagement and social responsibility, and enforcing strict environmental regulations to ensure responsible mining practices. Additionally, there is a need to develop educational and training programs to cultivate a skilled workforce capable of effectively managing and operating mining activities.

Keywords: *Mining Sector; Nigeria Revenue Forum 2012-2020; Economic and Development; Federal Government*

Introduction

Mining, one of Nigeria's oldest economic activities, was primarily conducted on a small-scale and artisanal basis. Artisanal and small-scale mining (ASM) encompasses mining activities carried out by individuals, groups, or communities using basic techniques and equipment. Such mining is marked by minimal mechanization, informal operations, and limited adherence to environmental and safety standards, including regulatory compliance.

Nigeria's history reflects a lengthy engagement with ASM, a substantial contributor to the nation's revenue generation and economic progress. Specifically, a scoping study conducted by the Nigerian Extractive Industry Transparency Initiative (NEITI) in 2011 highlighted that "Mining in Nigeria has a history of over 2,400 years, with initial mining taking the form of artisanal practices within communities exploring natural resources for their social and economic well-being." This legacy extends to ancient civilizations, as exemplified by the Nok Culture (340 BC), Igbo Ukwu bronze civilization (705 AD), and flourishing instances like the Ife and Benin Bronze works between 1163 and 1200 AD and 1630 and 1648 AD. These civilizations utilized basic materials such as clays, base metals, and gold. Organized mining was initiated in Nigeria circa 1903, aligning with the mineral surveys of the Southern and Northern protectorates. The Royal Niger Company commenced organized mining of cassiterite and associated minerals, such as tantalite and columbite, in 1905 in Jos, Plateau State, while coal exploration and mining commenced in 1906.

Furthermore, historical records confirm that the Royal Niger Company mined tin ore in 1905, marking the country's inaugural mineral extraction (Hodder, 1959). Subsequently, diverse minerals like coal, gold, bitumen, baryte, lead–zinc, and limestone have been extracted by both artisanal and industrial miners (Nigerian Bureau of Statistics, 2015). To facilitate coordinated mining operations, Nigeria's Federal Government established the Geological Survey of Nigeria in 1919 to take over the duties initiated by the survey teams in 1903. The Federal Government later established the Nigerian Coal Corporation (NCC) in 1950, the Nigerian Mining Corporation (NMC) in 1972, and the National Iron Ore Mining Company (NIOMCO) in Itakpe in 1979.

As evidenced from the preceding information, Nigeria's history of mining dates back to pre-colonial times, characterized by community-based traditional mining practices. However, the transition to colonialism and eventual national independence prompted the enactment of new laws, regulations, and government policies, prompting a shift from ASM to large-scale mining. This shift resulted in the overlooking and marginalization of ASM. The sector's contribution to the Gross Domestic Product (GDP) has dwindled compared to Nigeria's early years as a nation, when it emerged as a prominent solid mineral producer, contributing around 4 to 5 percent of the GDP during the 1960s and 1970s.

Statement of the Problem

Currently, the contribution of the mining sector to the revenue of the Federal Government of Nigeria (FGN) is negligeable compared to the potential of the sector. The sector which is a source of livelihood for millions of people in the country has undergone reforms in recent years with a view to improving its performance and increasing the contribution to the revenue of the FGN. The ideal scenario for assessing the mining sector's contribution to Nigeria's government revenue is a transparent and accountable system with accurate data and fair distribution. However, several problems hinder the accurate assessment of the mining sector's contribution to the revenue of the Federal Government of Nigeria during the period from 2012 to 2020. These problems include inadequate data collection and management, weak regulatory enforcement, informal and unregulated mining practices, lack of proper valuation mechanisms for minerals, revenue leakages, and limited community participation in revenue-sharing arrangements. Furthermore, there are challenges related to the accuracy of reported figures, inconsistencies in revenue reporting between different entities, and a lack of transparency in revenue allocation and utilization. These problems collectively impede the accurate determination of the mining sector's actual financial contribution to the federal government's revenue. If not resolved, these problems could hinder informed decision-making, sustainable development, and lead to social conflicts.

Objectives of the Study

The main aim of this study is to assess the contribution of mining sector to the revenue of the Federal Government of Nigeria while the specific objectives are to:

i. Identify the factors responsible for the mining sector's negligible contribution to the revenue of the federal government of Nigeria despite its potential.
ii. Make recommendations on enhancing the mining sector's contribution to the revenue of the federal government.

Research Questions

To be able to gather relevant information on the subject matter, the following research questions were asked:

a) What factors are responsible for the decline of mining sector revenue to the Federal Government of Nigeria?
b) What can the Federal Government of Nigeria do to enhance the mining sector's contribution to her revenue?

Statement of Hypotheses

H_0: The mining sector contribution to the Federal Government of Nigeria revenue has been significant.

Significance of the Study

This study on the assessment of mining sector's contribution to FGN revenue is crucial for the pursuit of economic diversification, resource management, job creation, attracting investment, infrastructure development, revenue generation, trade balance improvement, environmental sustainability, and effective policymaking. Therefore, it provides a holistic understanding of the sector's role in the national economy and guides efforts to harness its potential for sustainable development.

Scope of the Study

The assessment of the mining sector's contribution to the revenue of FGN involves a complex interplay of various variables. These include the quantity of minerals extracted and their market value, level of employment generated, export earnings, taxation, royalties, and other forms of government revenue among others. However, a comprehensive analysis of these variables collectively is not possible because of unavailability of data and information relating to most of them. In view of this development, only revenue from the sector is considered.

Limitations of the Study

Relying solely on revenue as the variable to assess the mining sector's contribution to the revenue of FGN has several limitations. This is because, revenue alone does not provide a comprehensive picture of the mining sector's impact on the economy. It neglects other important aspects such as employment generation, value-added activities, and the sector's multiplier effects on related industries.

Definition of Operational Terms

Mining Sector

Mining sector refers to the specific segment of the Nigerian economy that encompasses activities related to the exploration, extraction, processing, and utilization of mineral resources found within the country's geographic boundaries.

Contribution

Contribution refers to the share or amount of revenue generated by the mining sector that directly benefits the federal government of Nigeria. This contribution can be both financial and non-financial and represents the portion of income, taxes, royalties, and other economic benefits that the mining sector provides to the government.

Gross Domestic Product

Gross Domestic Product (GDP) refers to a key economic indicator that measures the total monetary value of all goods and services produced within the borders of the country during a specific period.

Revenue

Revenue refers to the total income generated by the mining sector because of its economic activities. It represents the financial inflow that comes from various sources within the mining sector, including the extraction, processing, and sale of mineral resources.

Employment

Employment refers to the number of individuals who are engaged in various job roles within the mining sector. This includes both direct employments, where individuals are directly employed by mining companies or related entities, and indirect employment, which encompasses jobs created in sectors that support or are impacted by the mining industry.

Multiplier Effect

Multiplier effect refers to the phenomenon where an initial increase in economic activity, such as the expansion of the mining sector, leads to subsequent rounds of increased spending and economic growth in related industries. This multiplier effect occurs as the money generated from the initial activity circulates through the economy, generating additional income and demand in various sectors beyond the initial one.

Review of Related Literature

Conceptual Review

In recent times, there has been a growing focus on the mining sector's contribution to the federal government's revenue in Nigeria, driven by its potential to diversify the economy and reduce reliance on oil-generated income. This conceptual analysis aims to delve into the theoretical underpinnings and conceptual frameworks that shape the interaction between the mining sector and government revenue. Within the realm of assessing the mining sector's impact on revenue, two conceptual models exist: the revenue generation model and the multiplier effects model. For the scope of this study, the revenue generation model will be adopted, elucidating the diverse channels through which the mining sector contributes to government revenue, encompassing taxes, royalties, and fees. This model also examines the influence of factors like global commodity prices, production levels, and regulatory policies on the overall revenue generated.

Theoretical Framework

There are several theorems that could be used to assess the contribution of mining sector to the revenue of the Federal Government of Nigeria. For this study institutional theory which focuses on the formal and informal rules, norms, and practices that shape behavior in societies and organizations is adopted. Applying this framework to Nigeria's mining sector, will enable the researchers analyze how institutional factors, such as regulatory frameworks, property rights, and governance structures influence the sector's contribution to government revenue. Specifically, this theory will help the researcher to identify institutional barriers that might hinder effective revenue collection and allocation.

Empirical Review

The Nigerian mining sector has undergone substantial regulatory overhauls to foster an investment-friendly climate. The implementation of the Nigerian Minerals and Mining Act in 2007 was pivotal, furnishing a legal framework that incentivizes private sector engagement (Adekoya, 2017). This Act establishes unequivocal ownership guidelines and rationalizes licensing procedures, rectifying past ambiguities. Integral to the reforms are initiatives to attract both domestic and international investments. The establishment of the Mining Cadastre Office (MCO) as a centralized hub for mining licenses and permits aims to simplify administrative protocols and bolster transparency (Kayode & Agunbiade, 2019).

One of the recent investigations into the effects of solid minerals mining is presented by Roderick (2001). This study delves into the correlation between mining and economic sustainability, predominantly utilizing qualitative analysis. Roderick's findings suggest that by effectively addressing the challenges linked to mining and economic development, the advantages of mining can be upheld, even as mines or mining communities experience eventual decline due to depletion of ore resources.

Adeniyi, Adeleke & Olabode (2013) conducted an analysis of the legal framework for exploring solid minerals to promote economic growth in Nigeria, primarily employing qualitative analysis. Their study underscores the importance of the solid mineral sector in driving economic development, wealth generation, and poverty reduction in mineral-rich nations. They concluded that Nigeria should adopt proven best practices and regulatory mechanisms used by other countries to formalize and oversee mining activities, ultimately achieving sustainable development in the Nigerian mining sector.

In a separate study, Akongwale, Ayodele & Udefuna (2013) explored the role of solid minerals in diversifying Nigeria's economy. Their research revealed the substantial potential of the solid mineral sector to significantly contribute to the national economy. The study highlighted the sector's capacity to combat poverty through job creation and its interconnectedness with other economic domains.

Adekeye (2010) delved into the impact of conflict on Nigeria's mining sector. His findings emphasized that the benefits derived from developing the mining sector far outweigh the potential losses associated with neglecting its advancement.

Furthermore, Agba's (2007) economic analysis of natural resource sustainability within Nigeria's mining sector context indicated that the nation stands to gain significantly from the comprehensive development of its solid minerals sector.

Olayinka and Ajibola (2016) underscore the significance of mining revenue in bolstering government finances and financing public services, while Adegbulugbe et al. (2019) explore the role of mining taxation in sustaining Nigeria's fiscal stability. The level of labor productivity within the mining sector holds implications for employment creation, as Okonkwo (2020) emphasizes the potential for job generation in the sector and the necessity for skills enhancement to boost labor efficiency.

The pivotal role of the mining sector in Nigeria's economic advancement is underscored by various studies. Notably, its substantial contribution to financial inflows has been recognized in economic literature, as acknowledged by Badeji and Adesida (2018). The mining sector can function as a catalyst for economic growth, yielding revenue, generating employment opportunities, and spurring infrastructural progress, particularly applicable to resource-rich countries like Nigeria. However, the Nigerian mining sector has encountered numerous obstacles that have curtailed its maximal potential contribution to the economy. Adegbite and Akoja (2018) illuminate challenges such as inadequate infrastructure, policy disparities, regulatory impediments, and limited access to financial resources. These hurdles have led to an underdeveloped mining sector with a constrained impact on overall economic growth and development.

Gaps in Empirical Review

While current research extensively delves into the revenue generation facets of Nigeria's mining sector, a conspicuous void exists in the holistic examination of local content advancement within the sector and its consequential influence on government revenue. Predominantly, existing studies concentrate on direct revenue streams such as taxation, royalties, and licensing, thus disregarding the potential for indirect revenue advantages stemming from heightened local involvement.

Methodology

Research Design

This study employed a quantitative approach to evaluate the mining sector's contribution to the Federal Government of Nigeria's revenue between 2012 and 2020. Specifically, a Simple Linear Regression Model was applied within the framework of the institutional theorem. This statistical technique explores the connection between two variables: an independent variable and a dependent variable. Its purpose is to illustrate how alterations in the independent variable correspond to variations in the dependent variable. In this investigation, the government revenue serves as the dependent variable, while the independent variable pertains to the institutional quality influencing the generation and collection of government revenue.

Area of Study

Nigeria, comprising, the 36 states and Federal Capital Territory was chosen by the researcher as the study area.

Sources of Data

The researcher used secondary data obtained from Nigeria Extractive Industry Transparency Initiative (NEITI) solid minerals audit reports for 2012 to 2020 published on the website.

Population of Study

The population of this study comprises companies and government institutions in the mining sector of Nigeria in 2012 to 2020.

Determination of Sample Size

The researcher used the mining sector revenue in the Nigeria Extractive Industry Transparency Initiative (NEITI) solid minerals audit reports for 2012 to 2020 for the study.

Model Specification

In this study, the researcher used Ordinary Least Squares (OLS) model to analyze the relationship between mining sector variables and GDP. The researcher assumed that mining sector revenue is the only variable that influences Nigeria's GDP. Accordingly, a simple linear regression model using OLS is formulated as in the model equation below.

The model equation is:

$$Y = \beta o + \beta_1 X + \varepsilon$$

Where:

Y= Government Revenue (dependent variable),
X= Institutional Quality (independent variable),
β_0= intercept, expected value of government revenue
β_1= coefficient representing the impact of mining sector revenue on GDP,
ε = error term accounting for variability in government revenue.

Description of Variables

The variables that are associated with this study are gross domestic product which is the value of all goods and services produced in Nigeria between 2011 and 2020 and revenue which is the value of income received by the government during the period under study.

Methods of Data Analysis

In this study, quantitative method was used to analyze the data gathered.

Data Presentation and Analysis

Data Presentation

Table 1: Nine Years Trend of Federal Government of Nigeria (FGN) Revenue from Solid Minerals Sector

Years	**Gross Domestic Product (GDP) ₦'000**	**Total Solid Minerals Revenue ₦'000**	**Mining Revenue as Proportion of GDP**
2012	71,714,000,000.00	28,270,342.14	0.04
2013	80,093,000,000.00	30,999,759.30	0.04
2014	89,043,615,260.00	49,602,647.07	0.06
2015	94,144,960,450.00	64,463,619.98	0.07
2016	67,980,000,000.00	43,222,388.31	0.06
2017	113,720,000,000.00	52,757,177.75	0.05
2018	127,760,000,000.00	57,185,125.75	0.04
2019	144,210,000,000.00	69,888,651.00	0.05
2020	152,320,000,000.00	116,815,370.69	0.08
TOTAL	**940,985,575,710.00**	**513,205,081.99**	**0.48**

Source: NEITI Solid Minerals Industry Audit Report 2012 - 2020

Data Analysis

$H_0$1: There is no significant relationship between solid minerals revenue and gross domestic product (GDP) in Nigeria.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826[a]	0.682	0.637	0.18051

a. Predictors: (Constant), SOLIDMINERALS REVENUE

b. Dependent Variable: GDP

The value of R^2 which is 0.826 indicates that the independent variable (Solid Minerals Revenue) explains 82.6% of the systematic variation of the dependent variable (GDP), leaving 17.4% unaccounted for. This figure further reduces to 63.7% when the R-squared statistics is adjusted. This means that other factors or determinants apart from the independent variable are responsible for GDP growth.

Table 3: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.489	1	0.489	15.01	.006[b]
	Residual	0.228	7	0.033		
	Total	0.717	8			

a. Dependent Variable: GDP

b. Predictors: (Constant), SOLID MINERALS REVENUE

The F statistics of 15.010 is significant at 0.006. Statistically, this means that there is a significant relationship between Solid minerals revenue and GDP.

Table 4: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.465	0.151		3.091	0.018
	SOLID MINERALS REVENUE	0.535	0.138	0.826	3.874	0.006

a. Dependent Variable: GDP

$H_0$1: There is no significant relationship between solid minerals revenue and gross domestic product (GDP) in Nigeria.

The p-values of 0.006 shows that solid minerals revenue is significant at 0.05 level of statistical significance. We therefore reject the null hypothesis which states that there is no significant relationship between solid minerals revenue and GDP in Nigeria at t-value of 3.874 and P-values of 0.006. The implication of this is that solid minerals revenue does statistically predict GDP growth in Nigeria. In other words, the contribution of the solid mineral to the economy is meaningful towards its development.

Findings

Reasons for the negligible contribution to FGN Revenue

The minimal contribution of the mining sector to the revenue of the Federal Government can be attributed to a multitude of factors. These include the volatility of global commodity prices, economic downturns, regulatory and policy obstacles. In addition, unauthorized mining and smuggling, inadequate infrastructure, environmental concerns, and regulatory complexities have all played a role in limiting the sector's potential contribution. Addressing these multifaceted challenges in a comprehensive and strategic manner is essential for unlocking the sector's true revenue-generating capacity and ensuring its sustainable growth in the broader economic landscape.

Recommendations for Enhancing Mining Revenue

To bolster the mining sector's contribution to the revenue of the Nigerian Federal Government, a multifaceted approach is imperative. This involves fortifying regulatory and policy reforms, fostering local content development, channeling investments into vital infrastructure, fostering proactive community engagement, and upholding social responsibility standards. Central to this effort is the stringent enforcement of environmental regulations, thus ensuring the practice of responsible mining.

Furthermore, it is vital to institute educational and training initiatives that cultivate a proficient workforce equipped to adeptly oversee and manage mining operations. By nurturing a skilled labor pool, the sector can efficiently navigate challenges and seize opportunities, ultimately propelling its revenue potential and cementing its role in Nigeria's economic growth trajectory.

Conclusion

The mining sector's contribution to the revenue of the Federal Government of Nigeria has undeniably witnessed positive growth. However, it is important to acknowledge that there are ongoing challenges that demand thoughtful attention and strategic solutions. By addressing these hurdles, it will pave the way for the sector to realize its full economic potential, thereby not only bolstering government revenue but also fostering sustainable development and growth for the nation as a whole. It is imperative that a collaborative and holistic approach is adopted to ensure that the mining sector becomes a driving force in Nigeria's economic landscape for years to come.

Recommendations

Improving the mining sector's contribution to the revenue of the Federal Government of Nigeria requires a comprehensive approach and collaboration by stakeholders.

Investment in Infrastructure and Technology

Government should develop and upgrade existing mining infrastructure, including transportation, energy, and water supply, to reduce operational costs and improve efficiency. Integrate modern technologies like remote sensing, geological mapping, and data analytics to identify mineral resources, assess reserves, and plan mining activities more accurately.

Effective Legal and Regulatory Framework

The following legal and regulatory framework are necessary:

i. Establish mining regulations that are clear and appealing to investors, fostering both domestic and foreign investment.
ii. Institute straightforward procedures for acquiring mining licenses, permits, and authorizations, simplifying the process and minimizing bureaucratic obstacles.

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