

EFFECT OF ILLEGAL MINING ON HUMAN SECURITY IN ZAMFARA STATE, NIGERIA

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Abstract

Despite the efforts of government, the level of insecurity in Nigeria is still high and the country has been consistently ranked low in the Global Peace Index, signifying poor state of insecurity in the country. A securitization discourse is often used to justify a military-style approach toward illegal mining but fails to acknowledge the multiple dimensions of human insecurity arising from illegal mining. A human security approach allows taking a more holistic perspective but has hardly been applied to the mining sector. Hence, this study investigates the effect of illegal mining on human security in Zamfara State, Nigeria. Survey research design was adopted and primary data were collected through the use of five-point likert scale questionnaire. The population of the study comprised residents of Anka and Maru local government areas in Zamfara State which is 434,180. The study used the Taro Yamani's formula to arrive at a sample size of 400 respondents. Simple random sampling technique was used in selecting the participants from the whole population. The data collected were analysed with simple ordinary least square regression statistical techniques. The results showed that illegal mining have a significant negative effect on human security in Zamfara State. The study concludes that criminal activities such as armed banditry, kidnapping, cattle rustling and armed robbery would continue to prevail in Zamfara State until practical measures are taken to prevent illegal mining activities. The study recommends that the government should take the issue of illegal mining as a national emergency and put in place drastic measures, such as proactive community policing and special task force to put an end to illegal mining.

Keywords: Human Security, Illegal Mining, Resource Curse Theory, Zamfara State.

INTRODUCTION

Illegal mining is a global challenge that is common in Africa and Nigeria in particular. The rise in illegal mining highlights fundamental social, institutional and structural problems in Nigeria's governance system. The adverse effects of illegal mining are concerns in Nigeria, and insecurity is one of the adverse effects of illegal mining in Zamfara State. Despite the efforts of the government, the level of insecurity in Nigeria and Zamfara State in particular is still high and the country has been consistently ranked low in the Global Peace Index, signifying poor state of insecurity in the country (Robert-Okah, 2014). A securitization discourse is often used to justify a military-style approach toward illegal mining but fails to acknowledge the multiple dimensions of human insecurity arising from illegal mining. A

human security approach allows taking a more holistic perspective but has hardly been applied to the mining sector.

Moreover, illegal mining is a security crisis for Nigeria. Since 2011, violent local conflicts and rural banditry, associated with illegal mining, have been on the increase in the North West, especially in Zamfara State (Okoli, 2019). Over 3,600 people were kidnapped between 2011 and 2019. In Zamfara State alone, a reported 6,319 people, including women and children, were killed between June 2011 and May 2019 (West Africa Network for Peace Building (WANEP), 2019).

Currently, the Birni-Gwari axis of Kaduna is referred to as 'the axis of danger and hazards', including the Katsina- Kebbi-Zamfara axis, which has become 'the epicenter of rural banditry'. In April 2019 the Federal Government of Nigeria banned all forms of gold mining in Zamfara State in response to the situation and deployed the military to enforce the ban. On their part, Zamfara State government has led negotiations and held dialogues with criminal groups and illegal miners. In spite of these responses, illegal mining and rural banditry in the Zamfara State has continued unabated, along with associated conflicts.

On 19 May 2020, 27 illegal miners were arrested in Zamfara State (Amnesty International, 2021), this has raised questions about the effectiveness of the various state responses to the challenges, especially the capability of state security forces to enforce the ban and curtail rural banditry and escalating local violent conflicts across the State.

The human security effects of illegal mining and associated governance challenges are a cause of increasing concern worldwide, and Nigeria is no exception. This is reflected in the growing body of literature on illegal mining and human security, especially in the past 10 years. It is acknowledged that the extractive sector contributes considerably to the national economy. However, its adverse effects, notably on the human security, are increasingly acknowledged as well (Gamu et al., 2015). The multidimensional nature of human security (Alkire & Foster, 2011) requires a more holistic analysis of the effect of illegal mining on human security. It is against this background that this study aims to unravel the effect of illegal mining on human security in Zamfara State, Nigeria.

Statement of the Problem

Illegal mining activities have contributed to the banditry and other security challenges Zamfara State is facing, the State had exposure of large deposit of gold which made the locals to storm the mining sites in droves to do illegal mining (Kareem, 2020). The abundant of several mineral resources in the State is believed to have attracted foreigners who come in to buy gold and other precious stones and that instead paying people, some of them pay back with arms. While illegal mining has received criticism from several areas, the Nigeria government is more particular about its effect on human security. As a result, the level of human security, which forms the basis of any other economic activities, is seen to be the most area affected by illegal mining. Therefore, it invokes thoughts of examining why people are motivated to give off legally source of livelihood for illegal mining.

Although the human security approach was already developed in the 1990s (The United Nations Development Programme (UNDP), 1994, 1993), its application to illegal mining studies is relatively new (Engwicht & Grabek, 2019; Johnson, 2019). Traditionally, security studies focused primarily on international relations and global politics (Williams, 2012), generally overlooking human security. Attention was paid to economic security, but this was usually framed in terms of access to financial resources and markets to sustain

welfare and state power. This state-focused definition of security changed with the call for a people-centered definition in the 1993 and 1994 Human Development Reports of the UNDP, 1994, 1993). These reports reframed security as 'human security' or 'security for people' (UNDP, 1994).

This study links illegal mining to human security, with special focus on Zamfara State. The focus on Zamfara State is justified because the State has been on the headline with issues of banditry and cattle rustling in recent times, on the one hand, and dealing with the multiple adverse effects of illegal mining, on the other. This dilemma notably plays a role in areas where illegal mining prevails.

The only study carried out in Nigeria is the empirical work of Adedoyin et al. (2018), they assessed the national security implications of illegal mining of the solid mineral endowments of Nigeria within a resurging governmental interest in planning economic development on exploitation of these mineral deposits. The study did not focus on Zamfara State, hence, the need to focus on Zamfara State.

Most previous studies carried out by different scholars in relation to illegal mining activities and human security, such as Kwateng (2012); Owusu and Dwomoh (2012); Adu and Amponsah (2016); Arnold et al. (2017); Garr (2018); Ralph et al. (2018); Karemangingo (2020); Ros-Tonen et al. (2021); Domina and de Dieu (2021) were some of the studies conducted outside the shores of Nigeria. Therefore, there is need to domesticate the study in order to ascertain if the results will be different or not. This study tries to bridge the gap in research by focusing on the effect of illegal mining on human security in Zamfara State, Nigeria.

The general and specific objective of this study is to determine the effect of illegal mining on human security in Zamfara State, Nigeria.

Statement of the Hypotheses

H₀₁: Illegal mining have no significant effect on human security in Zamfara State, Nigeria.

LITERATURE REVIEW

Illegal Mining

Illegal mining is the mining activities without licenses, no concessions of their own; their operations are furtive and clandestine in nature often initiating confrontations with both state law enforcement agencies and, operating uncontrollably within the concessions of large-scale mining companies or in areas prohibited for mining such as forest reserves and environmentally sensitive areas (Appiah 1998).

Illegal mining refers to exploring or extracting without the necessary approval or documents. Illegal mining also refers to mining without land rights, exploration and mineral transport permit (Dozolme, 2016). Illegal miners disregard the mining laws, undertake mining in prohibited areas and fail to follow the environmental rules, laws and regulations, labour and tax laws. The illegal mining sector uses lesser technology for the extraction and labour intensive. The use of hammer, shovel, pick axe, pans and chisel are some simple equipment for the illegal mining operations (Reisenberger, 2010).

Illegal mining is an umbrella term covering both illegal extraction and trade of minerals, including the illegal use of toxic chemicals, such as cyanide and mercury in mining activities. Illegal mining has evolved into an endemic and lucrative enterprise in several regions across the globe, with seriously damaging consequences on human security, peace

and stability, human rights in vulnerable communities, who are exposed to human trafficking, forced labour, child and women abuse/exploitation and pervasive (sexual) violence; health issues for local miners and adjacent communities caused by the chemical substances, environmental and human displacements to facilitate the business (Balanay & Halog, 2017). Illegal mining can therefore be explained as the act of carrying out mining activities by individuals and small-scale mining companies operating without an official license.

Human Security

Human security is chiefly concerned with physical and mental safety from violence particularly from violent crime (Cao & Wyatt, 2016). Human security is an essential component of freedom from fear, limiting the practice of human security to the protection of individuals from violent conflict allows for a more effective approach toward ensuring human security worldwide (Dung & Lan, 2015).

Human security shift security grounded on national security to human security that includes the welfare of the people, development, antipoverty measures and strategies and all the means to ensure better living, life free of hunger and full of freedom of choice (UNDP, 2003). The concept of human security may also refer to an emerging paradigm to understand the global vulnerability in more advance way rather than traditional view of security as national issues rather as the human issue that primary affect people in environmental, community, personal, social, health, political interactions or concerns for the well- being of the human beings (UNDP, 2011).

The objective of human security is to safeguard the vital core of all human lives from critical pervasive threats, in a way that is consistent with long-term human fulfillment. Human security takes its shape from the human being which is the vital core that is to be protected. Institutions that undertake to protect human security will not be able to promote every aspect of human well-being. But at very least they must protect this core of people's lives (Alkire, 2003).

The human security approach urges institutions to offer protection which is institutionalised, not episodic; responsive, not rigid; preventative, not reactive. In this way, people will face inevitable downturns "with security." Safeguarding human lives implicates not only those institutions that intend to promote human security overtly, but also institutions that unintentionally undermine it (Howard-Hassmann, 2012).

Human security from physical violence is the most prominent aspect of human security, with threats from other groups of people in ethnic conflict as primary threats to human security (Crossman, 2014). Human security can trace its origins to the human rights proclaimed in 1941 by the president of the USA – Franklin D. Roosevelt, which related to four types of freedoms inherent to every person: freedom of speech and expression, freedom to worship God in one's own way, freedom from want, and freedom from fear (Gierszewski, 2017). Human security aims to protect people from physical violence, whether from the state or external states, from violent individuals and sub-state actors, from domestic abuse, or from predatory adults. Human security can therefore be defined protecting people from critical (severe) and pervasive (widespread) threats and situations.

Empirical Review

Kwateng (2012) ascertained the environmental impact of mining and the well-being of the people in Akwatia, Ghana. The study revealed that the community is aware of the

environmental impact created by illegal mining activities. Based on the arguments of the respondents, it was deduced that there has been loss of agriculture and livelihood as negative impacts of mining, especially illegal mining. The community is aware of the existing situation but there must be a great awakening in terms of education and public involvement, so as to be able to create massive awareness in the community in order to reduce future impact to the environment and on the well-being of the people. Though, the practice have turned out to be a main source of revenue for the general public in Akwatia, particularly the youth, the situation put danger and hazard to the sustainability of the environment on the long run, it will also have an effect on the general public if the mine is closed again in future.

Owusu and Dwomoh (2012) examined the impact of illegal mining on the Ghanaian youth, using Kwaebibirem district in Ghana as a case study. Using a case study approach, the research work used interviews, observations and documentary sources to obtain data for the study. In addition, the researchers toured some of the mining areas in the Kwaebibirem District of Ghana, to acquaint themselves with the activities of the miners and how these affect the youth. Finally, the researchers contacted Chief Nursing Officer of Kade Government Hospital and Educational Officers of the statistical division of Kade Education Office to interview and had discussions with them over the attitudes of the youth towards school before and after "their illegal mining activities". The findings showed that poverty, ignorance and get rich quick attitude of the youth have been identified as the motivational factors for illegal mining activities in the Kwaebibirem District. It also showed that illegal mining activities have negative impact on the youth in relation to high rate of student turnover, increase in teenage pregnancy, disrespect towards the elderly and engaging in undesirable behaviours such as smoking of hard herbs.

Adu et al. (2016) investigated factors that influence ones decision to participate in illegal mining in Denkyira corridor. Snowball and purposive sampling techniques were used to select 160 respondents and binary probit model was used to identify the factors that influence ones decision to participate in illegal mining in the study area. The study found that household size, Age, sex, Educational attainment, perceived risk and peer influence are key predictors of ones decision to participate in illegal mining in Denkyira corridor.

Arnold et al. (2017) employed qualitative research methods to examine the implications of illegal mining in Gauteng Province. The thematic approach was applied to analyse data. The study reveals pertinent issues, chief amongst others include lack of an integrated strategy to address illegal mining, weak coordination between key role players, and a fragmented policing approach to illegal mining. Additionally, the study indicates that crimes such as property related crime and house burglary are among other types of crime that are associated with illegal mining activities.

Adedoyin et al. (2018) assessed the national security implications of illegal mining of the solid mineral endowments of Nigeria within a resurging governmental interest in planning economic development on exploitation of these mineral deposits. It found that there is wide spread illegal mining in the country with its attendant economic loss and that in spite of this organized criminal trend, government's explicit national security policy does not prioritize illegal mining as a national security concern. It also finds that extant laws and institutions established for the protection of the solid mineral deposits of Nigeria are inadequately structured to provide the needed security coverage for these minerals from illegal mining.

Garr (2018) assessed the social impacts of illegal gold mining activities at Dunkwa-On-Offin, the capital town of Upper Denkyira East Municipality in the Central Region of Ghana. It adopted both the quantitative and qualitative approach. Out of three hundred and eighty (380) questionnaires administered, three hundred and forty-four (344) were returned. Of the three hundred and forty-four (344) returned, twenty four were rejected because they were not filled out properly. In the end, three hundred and twenty (320) questionnaires were analysed. The result of the analysis revealed that factors such as poverty, unemployment, illiteracy and peer influence triggered illegal gold mining. The social effects of illegal gold mining included increase in cost of living, increase in the rate of crime, increase in the rate of illiteracy, increase cases of ailments and increase in the population of residents in Dunkwa-on-Offin.

Ralph et al. (2018) examined the health and environmental issues surrounding the mining sector in Cameroon so as to foster its development. It was a cross-sectional, observational, and community based study involving 273 respondents from three different communities. Questionnaires and interviews were used to collect data. Occupational health and safety risk assessment was conducted through direct observation and inspection of five different workplaces. Blood samples were collected and analyzed for the presence of mercury and lead. Gold miners in Batouri are exposed to the risk of physical injuries, respiratory conditions, diarrheal conditions, psychotic disorders, dermatophyte infections, helminthic infestations, malaria and musculoskeletal problems. The most common health problems among miners are musculoskeletal disorders, malaria and hernias, while malaria and musculoskeletal disorders are common among stakeholders. The major environmental problems are deforestation, land degradation, water pollution, air pollution and water-logged pits. Artisanal Gold Mining in Batouri, therefore, has a negative impact on human health and environmental sustainability.

Karemangingo (2020) examined the effect of mining related safety risks to human security in Muhanga District. It employed descriptive research design with both qualitative and quantitative approach that applied purposive sampling techniques on 69 respondents. The study revealed that safety materials are provided by companies during activities of mining, and nobody experienced fatality related to mining. The results have also shown that there is a relationship between mining fatalities and personal security, between mining fatalities and health security, and between mining diseases and economic security.

Ros-Tonen et al. (2021) analyzed the human insecurities related to gold mining in Ghana. The analysis was based on eight human security dimensions. The analysis is based on a light version of a systematic literature review of qualitative and quantitative empirical studies on gold mining impacts, using systematic search and review methods to critically assess all that is known about the topic. The review captured articles retrieved from the Web of Science and Scopus databases published between 2011 and 2020. A total of 349 records were retrieved from the two databases, of which 217 remained for full-text screening after removing duplicates, resulting in 97 studies that met the inclusion criteria. A narrative synthesis was chosen to present the analysis results, alternated with tables and graphs where appropriate. Results revealed that the reviewed literature predominantly focuses on environmental and health insecurities, less on economic, food, and community insecurities, and hardly on personal and political insecurities. The study concluded that human security approach enables a comprehensive analysis of a country's mining sector but still bears the risk of a 'securitization trap'.

Domina and de Dieu (2021) examined the impact of illegal mining on wellbeing of people in Huye District, Rwanda. The study employed descriptive research design. The study population comprises 230 persons of people around the mines in Kamwambi and Nyaruhombo cells, Rwaniro sector, Huye District. In this context, purposive sampling and convenience sampling techniques was used to determine the representative sample size. The study collected primary data through self-designed questionnaire. For primary data collection, the study used a structured questionnaire. Regarding secondary data, the study used reports from Huye District. Karl Pearson coefficient was used to analyze the relationship or correlation between the variables under study. The study findings indicate the loss of taxes to the government due to the fact that illegal miners do not pay tax.

Theoretical Review

Resource Curse Theory

The term resource curse was first used by Richard Auty in 1993 to describe how countries rich in mineral resources were unable to use that wealth to boost their economies and how, counter-intuitively, these countries had lower economic growth than countries without an abundance of natural resources. The big idea behind the 'resource curse' is that mineral and fuel abundance in less developed countries (LDCs) tends to generate negative developmental outcomes, including poor economic performance, growth collapses, high levels of corruption, ineffective governance and greater political violence. Natural resources, for most poor countries, are deemed to be more of a 'curse' than a 'blessing'.

The resource curse theory suggests that the natural resources found in some areas are seen as a curse rather than blessing. The worse economic and political mess is experienced in mineral rich countries than non-rich natural resourced countries (Siegel, 2008). Striking gold or discovering oil would seem to guarantee instant fortune. Instead, it often leads to conflict, corruption and poverty. History is full of examples of countries whose natural-resource wealth led to less economic success. Economists and social scientists call this phenomenon "the resource curse." Many countries are trying to determine how to prevent or reverse it. For a decade, momentum has been building behind international efforts to prevent corruption and improve management of natural-resource wealth through greater transparency.

This study applies the resource curse theory to ascertain how illegal mining affects human security in Zamfara State, Nigeria, because a State like Zamfara State that is well endowed with abundance of Gold, but illegal mining activities in that area has led to insecurity, unemployment, poverty in that area.

METHODOLOGY

Research design adopted for this study is survey design. The primary data were collected through structured questionnaires. The targeted population of the study are residents of Maru and Anka local governments, particularly the farmers, nomadic herdsmen, the community leaders (chiefs/sub-chief, assembly members), and the districts police command units in the two local governments areas in Zamfara State. These two communities are Maru and Anka. Maru has a population of 291,900 as at the 2006 census and Anka, has a population of 142,280 as at the 2006 census. Simple random sampling as well as purposive sampling techniques was used in selecting the participants from the whole population. To ensure that the population was well represented, the researcher adopted proportional allocation procedure for the questionnaire.

To determine the sample size, the study used the Taro Yamani's formula as follows:

$$S = \frac{N}{1+N(e)^2}$$

Where:

S = sample size sought

N = population size

e = level of significance (0.05)

Therefore, the sample sought is;

$$S = \frac{434180}{1+434180(0.05)^2} = \frac{434180}{1086.450} = 400$$

For the purpose of this study, a multi-stage sampling technique was used. In the first stage, Maru and Anka Local Government Areas were purposively selected from the Zamfara State. In the second stage, the sampling for the respondents was purposively selected for their knowledge and expertise in the given area and their availability to respond to the issues. The questionnaire had a section of close ended questions, as well as a section of questions with a 5-point Likert scale rating. Participants were asked to indicate the extent to which they agreed with each statement using the same 5-point scale: 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4=Agree, 5= Strongly Agree.

The hypothesis formulated for the study was tested with simple ordinary regression with aid of Statistical Package for Social Sciences (SPSS) version 26.0 software package. The researcher distributed four hundred (400) copies of questionnaires, and three hundred and seventy-six (376) were returned, the rate of returned questionnaires represents 94 per cent.

Model Specification

Simple Ordinary Least Square regressions analysis enables the study to examine the effect of illegal mining on human security in Zamfara State, Nigeria.

$$HSEC = \beta_0 + \beta_1 ILEM + \epsilon$$

Where;

ILEM = Illegal Mining

HSEC = Human Security

β_0 = is the constant or coefficient of intercept

β_1 = the corresponding coefficient for the respective independent variable

ϵ = stochastic error term

DATA ANALYSIS AND RESULTS

Test of Hypotheses

H₀₁: Illegal mining have no significant effect on human security in Zamfara State, Nigeria.

Model Summary

The model summary shows the summary of the regression analysis as shown in the regression model. Below are the findings in the table 1 below;

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798 ^a	.637	.632	.46698

a. Predictors: (Constant), Illegal Mining

This study analysed the data on the relationship between the dependent variable (human security) and the independent variable (illegal mining). The results showed that R²

value was 0.637 hence 63.7% of the variation in the dependent variable (human security) was explained by the variations in independent variable (illegal mining).

Analysis of Variance

The study conducted an Analysis of Variance, in order to test the effect of illegal mining activities on human security in Zamfara State, Nigeria. The findings were as presented in tables 2 below:

Table 2: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	91.804	5	30.601	140.328	.000 ^b
	Residual	52.337	371	.218		
	Total	144.140	376			

a. Dependent Variable: Human Security

b. Predictors: (Constant), Illegal Mining Activities

From table above, F value of 140.328 is significant at 95% confidence level. This is because the *P value* is less than 0.05. The strength of the variation of the predictor variable influences the dependence variable (human security) at 0.00 significant levels. The result implies that illegal mining can predict human security.

Test for Coefficients

Table 3 shows the level of significance on the variables, it also provides the standardized and unstandardized coefficients.

Table 3: Coefficients^a

Model		Unstandardized		Standardized	T	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	.666	.155		4.300	.000
	ILEM	-.382	.054	-.399	-7.044	.000

a. Dependent Variable: Human Security

From table 3 above, it indicates that illegal mining have negative effect on human security in Zamfara State, because the coefficient of illegal mining ($\beta = -0.382$) is negative. It can be deduced that illegal mining has significant effect on human security because the *p-value* is 0.000 which is less than 0.05 level of significance. This indicates that the dependent variable, human security, would change by a corresponding number of standard deviations when illegal mining change by one standard deviation. This finding implies that if illegal mining changed by one (1) unit, human security would reduce by 0.382 units, if other factors remain fixed. The null hypothesis was therefore rejected since illegal mining were able to significantly influence human security. The researcher therefore opted for alternative hypothesis.

DISCUSSION OF FINDINGS

The general objective of this study is to determine the effect of illegal mining on human security in Zamfara State, Nigeria. The result of this study shows that illegal mining have a significant negative effect on human security in Zamfara State, Nigeria. This result could be explained due to the fact that one dangerous dimension to illegal mining is crime and armed conflict. In most of the mining communities, one will find widespread violence and kidnapping due to gang rivalry over mining resources. As a result, the level of human security, which forms the basis of any other economic activities, is seen to be the most area affected by illegal mining. This result is also similar to the studies of Kwateng (2012); Owusu

and Dwomoh (2012); Adu and Amponsah (2016); Arnold et al. (2017); Garr (2018); Ralph et al. (2018); Karemangingo (2020); Ros-Tonen et al. (2021); Domina and de Dieu (2021).

CONCLUSION AND RECOMMENDATIONS

This study set out to determine the effect of illegal mining on human security in Zamfara State, Nigeria. Previous studies were reviewed and responses were analyzed and tested. Based on this, the study discovered that illegal mining is one of the main causes of human insecurity in Zamfara State. The study concluded that criminal activities such as cattle rustling, banditry, kidnapping and armed robbery would continue to prevail in Zamfara State until practical measures are taken to prevent illegal mining activities. The recommendation of the study is for the government to take the issue of illegal mining activities as a national emergency and put in place drastic measures, such as proactive community policing.

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