

Effect of Petroleum Pipeline Vandalism on Human Security in the Niger Delta Area of Nigeria

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Abstract

Petroleum pipeline vandalism in oil rich communities of Nigeria seems to have taken toll on so many aspects of the country's national life. This is even more so as pipeline vandalism seems not to abate. This study examined the effect of petroleum pipeline vandalism on human security in the Niger Delta Area of Nigeria. The study is anchored based on the mixed research design. The population of the study is 44,112,908 persons representing the total figure of nine Niger Delta States as projected by both the Bureau for National Statistics (NBS) and the Nigeria Population Commission (NPC), 2022. A sample size of 400 respondents was drawn from the population via the application of the Taro Yamene Formula. A 4-point modified Likert-Scale Questionnaire was used to collect data from the respondents; this was complimented with information gotten from interviewers and other secondary documented materials. Generated data were analyzed via tables and simple percentages, while the hypothesis was tested using Chi-square. The study concluded that; poor policing, crime collaboration, wide spread poverty, sabotage etc are responsible or are the chief cause of pipeline vandalism. the paper revealed that, oil pipeline disasters/vandalism have resulted to low production of petroleum products, low prices of products, power failure, corruption, destruction of family assets and environmental degradation which are all veritable impediment to human security. Accordingly, the paper recommends that; the federal government and the Nigeria National Petroleum Company Limited (NNPCL), should strengthen the recently adopted local security surveillance network for monitoring oil pipeline installations within the coastal communities of the Niger Delta Area of Nigeria, as a strategy for mitigating pipeline vandalism and improving human security.

Keywords: *Petroleum, Vandalism, Pipelines, Security.*

Introduction

Petroleum resources is the life wire of the Nigeria's economy. In particular, oil and gas resources are vital to Nigeria's economy for many reasons, including income, export earnings, energy production, industrialization, infrastructure, and the advancement of society (Paki & Dan-Woniwei, 2024). Its peak, it was noted that the Niger Delta's oil and gas resources contributed roughly 50% of the GDP, 85% of the country's budgetary revenue, and 95% of the government's foreign exchange earnings (Garuba, 2016). Under the shadow of Nigeria's crucial reliance on the petroleum industry, a subsector of the economy is thriving unchecked, supported by crude oil theft, illicit bunkering, and pipeline vandalism.

The incidence of pipeline vandalism has been on the rise in recent times in the Niger Delta which is affecting oil production thereby making the country's output projection of 2.2million

bpd dropping to less than 1.1million bpd (CBN, 2016). This has affected Gas supply for electricity generation and distribution in the country thereby crippling business activities and economic growth which calls for immediate action that will put a stop to the ugly situation so as to restore confidence into the power and energy sector which will pave way for business activities to thrive and subsequently, economic growth and development (Okere, 2013). Akpan (2013) opined that the Nigeria's pipeline infrastructure has been subjected to incessant attacks by militants and pipeline vandals across the country. Scholar noted that the frequency of such attacks has been very alarming because it engenders pollution of the environment which is consequential to human health, and negatively impacted the economy. Indeed, pipeline vandalism has led to drift in investment domestically and internationally. Poor policing and protection of pipeline infrastructure, political/militant agitation and endemic corruption are some of the challenges in crude oil pipeline vandalism in Nigeria. However, the fundamental issues are the attendant consequences of pipeline vandalism which generally affect human life, properties and also create a decline in crude oil sales and reduce revenue projections, scarcity of Premium Motor Spirit and decline in electricity generation which all affects human security and economic growth and development.

The frequency of pipeline vandalism in the Niger Delta Area of Nigeria, according to Johnson, Laing, Bjeirmi & Leon (2022) has drawn attention from around the world. Its negative effect on people and the environment, which includes ongoing human and animal deaths, pollution of the water and air, soil contamination, eradication of the ecosystem, destruction of property and infrastructure, and loss of crude oil and refined products have attracted global attention.

It is against this background that this paper investigated the effect of crude oil pipeline vandalism on human security in the Niger Delta Area of Nigeria, 2014 – 2024. The paper raises a single question: what is the relationship between petroleum pipeline vandalism and human security in the Niger Delta Area of Nigeria? Accordingly, the paper is guided by the assumption that there is no significant relationship between petroleum pipeline vandalism and human security in the Niger Delta Area of Nigeria.

The paper is segmented into four interrelated parts. Part one is the introduction which was just concluded, part two is the theoretical framework and conceptual explications. Part three covers a brief synopsis of the method via which data was generated and analyzed, while the final part encompasses data presentation, data analysis, discussion and conclusion/recommendation.

Theoretical Framework

Routine Activity Theory

Routine Activity Theory emerged from the crime opportunity theory that specifically focuses on space-time convergence leading to crime situations. It is developed by Marcus Felson and Lawrence E. Cohen in 1979 and they have shifted their justification for causes of crime from poverty and inequality to situations aroused in routine activity life of the victim and offender. According to Felson, crime is not happening because of 'evils of society' or any other social problems like socioeconomic inequality. This perspective is built on the belief system that shifted its quest to find solution to crime problem from social revolution to modest interventions. Felson and Cohen targeted the counteract mechanism for crimes rather than laying greater emphasis on explaining root causes of crime. This theory was influential in shaping the evidence-based policies that were interested in what works.

The criminological theory has explained criminality from various angles with suitable justifications. The question posed was, why some commit crime whereas others choose to

conform? And in order to answer it, the criminologists framed theories keeping criminality as its base. Some of the theories gave the perspective of disorganized communities, ineffective informal social systems; association with anti-social elements and others explained criminality through negative effects of incarceration. Unlike other theories, Routine Activity Theory adopted a different path, i.e., to explain crime and not the criminality. The focus of explanation was placed on present situations rather than digging up the past. The criminological question was reversed. The offender was portrayed as a sensible-decision maker who chooses a particular situation over other to commit a crime and his decisions are based on what, where, how and who (target) of crime. The popularity of Routine Activity Theory lies in its perspective of offering practical solutions to prevent and reduce crimes.

Previous studies show that even if the offender is motivated to commit crime, he cannot, unless opportunity to commit crime is present (Cullen, 1984), whereas, on the other side, researches have linked crime rate in a particular location with number of motivated offenders present in vicinity. This aspect demeans the role of ‘opportunity’ to commit crime. In response to that, the supporters of opportunity factor argued that, for an individual to commit crime, he/she needs to have access to opportunities and the availability of opportunities in certain geographical areas determines the propensity of crimes taking place over there. In a way, this theory tends to explain the reason behind people committing crime through the availability of opportunities to do so.

Offenders: Cohen & Felson (1979) noted that for a criminal act to happen, two things are required, target for the offender and absence of a guardian. In fact, Felson went ahead to argue that offender is not even that important entity for a crime to happen. It is all about time-space convergence of target’s availability and absence of guardian. The favourable positioning of targets and absence of guardians are enough to instigate crime rise in a particular area even if offenders do not get motivation to commit crimes. To support this idea, Cohen and Felson explained the reason behind it. According to them, after World War II the citizens of the United States have faced a sudden social structure shift in their routine activities as they tend to spend significant amount of time away from home. This led to increase in number of day time burglary cases where the targets within homes are left unattended. Similarly, the rise in number of cases of robbery was reasoned for people out in open (office, school, community or any kind of leisurely activity) coming in contact with motivated offenders too often especially when there’s no guardian present. Generally, Cohen and Felson through their research has shown that the era of 1960s that improved socio-economic situation of the society changed their routine activities to stay away from home which was linked with rise in crime rate (significantly burglary, rape, serious assault, robbery and homicides) due to absence of guardian at the place of crime.

Targets: Routine Activity Theory is framed on macro level analysis of victimization process. Cohen and Felson used the word suitable targets and not the victim because they do not want to restrict their theory to persons only. They wanted to cover property as well. In yet another interesting perspective of rise in crime rate due to nature of target, Cohen and Felson explained that property crimes are happening largely due to availability of good quality of targets rather than economic deprivations. According to them, the targets which are durable, movable, have good resale value gives profit and are preferably selected by offenders. To understand the issue of victimization from a different angle, Garofalo (1987) did a victim survey and contended that some people are more prone to getting victimized due to their lifestyle. They live a risky life and make decisions which are prone to exploitation from offenders. This opens up the scope for victims to guard themselves against crimes by refraining from being in risky situations.

Guardians: Cohen and Felson use the term ‘capable guardian’ and not police specifically because their perspective of a controller is beyond the mechanism of criminal justice system. For Routine Activity Theory, capable guardian involves everyone who could guard the target. This may include family, friends, neighbours, or any one from the public. The guardian could also be a non-living thing such as a CCTV or electronic system installed at home. The importance of presence of a guardian in preventing crimes was also empirically supported by Pratt & Cullen’s (2005) research based on meta-analysis which specifically studied the significance of guardianship in crimes. The Routine Activity Theory opened ways for scientifically exploring the significance of guardianship from various perspectives. One may examine the important role of guardian apart from proving deterrence effect or study the contribution of guardianship in overall crime prevention through the implementation of routine activity theory.

The theory as a working module is relevant to guidelines for preventing crimes by placing legitimate obstacles in space and time between offender and target. It was suggested that target needs to be made less attractive and watched over by a capable guardian. The theory also has apparent links with environmental design of society that plays crucial role in reducing criminal opportunities. Newman (1972) in line with routine activity theory proposed an idea about ‘defensible space’ which according to him are dwellings with certain characteristics that includes associations of houses for better sense of belonging, highlighted paths of movements, defining areas of activities and acceptable level of surveillance for better visualization of activities in internal living areas. The same idea resonated in Jeffery’s (1971) theory on crime prevention through environmental design. Routine Activity Theory emphasis on the aspect of social bonds as well. As per the theory, if there’s a strong social bond between a potential offender and his/her family/community then the probability of committing crimes becomes too low. A stronger social bond tends to nullify the attraction resonating from criminal opportunities. Apart giving sociological solutions to crime, RAT played crucial role in executing problem-oriented policing (POP) and problem analysis at community level. The theory could also be used to understand and even predict distribution of crime in space and time in a particular locality. One may examine the routine activity of people in a particular area with the people of adjacent or any other area and try to find out the difference in crime rates. This could be further examined to understand whether there’s a significant link between lifestyles of the residents with the pattern of crimes in their respective areas.

The theory is relevant to this study in the sense that it is an environmental and location-based criminological theory predicated on four (4) basic elements where the convergence of motivated offenders (vandals and collaborators) locates their attractive target (crude products, pressure in the pipelines) for get-rich-quick syndrome (GRQ) in the absence of capable guardian (lack of surveillance, compromised security apparatus). The theory best describes the Niger Delta environment as the economic hub of Nigeria with the network of product pipelines that cut across local and international boundaries. The people feel neglected in spite of the presence of unquantifiable amount of wealth yet poverty, unemployment, environmental devastation, water pollution leading to death of aquatic lives were significant reason for aggression.

In order to get rid of poverty, some groups adopt a crude method of vandalising petroleum pipelines to siphon/steal crude oil, illegally refine it and create a distribution market for local consumption has become a routine activity. Get-rich-quick syndrome is therefore the new normal amongst the youths. This idea amongst the youths is derived from the belief that going to school will not help them acquire financial wealth. For them, the ultimate goal in life is to

make money and live in luxury. The strong desire to quickly acquire financial wealth while doing almost nothing tangible or worthy of the financial rewards they seek for has led many youths into immoral, illegal and criminal acts such as fraud, kidnapping, robbery, 'money rituals', human organs harvesting, drug dealings and vandalization of petroleum pipelines for instant profits. Many scholars and researchers have treated the issues and crimes that arises from this dangerous trend called the get-rich-quick syndrome such as kidnapping, fraud and other illegal businesses.

Conceptual Explications

Concept of Pipeline Vandalism

The concept of pipeline vandalism is vital in this paper and as such to highlight details of its mean is very important. The term pipeline vandalism would be used interchangeably with petroleum pipeline vandalism, crude oil pipeline vandalism, oil pipeline vandalism, petroleum product pipeline vandalism, oil sabotage, pipeline breaking and destruction. The context and scope of this paper is therefore limited to petroleum or crude oil pipeline vandalism and its effect on human security in the Niger Delta Area of Nigeria.

First, the term "vandalism" is a deliberate act carried out by aggrieved persons with the aim of destroying properties. It is a wilful damage. Christensen, Johnson & Brookes (1992) defined vandalism as a deliberate hostile behaviour aimed at environmental objects with the motive of damaging the property. Umar & Othman (2017) noted that vandalism may take many forms, including tactical vandalism (sabotage at the work place); vindictive vandalism (form of revenge); play vandalism (breaking of window panels); and malicious vandalism (vandalism out of boredom, exasperation, resentment, and frustration). The concept of vandalism according to Chibuzor (2014) is an illegal or unauthorised activity carried out jointly with different entities in the destruction of gas, petroleum, and chemical pipelines. Umar & Othman (2017) describe vandalism as a thoughtful antagonistic behaviour of unsatisfied and corrupt individuals aimed directly to an environmental object with a destructive motive of damaging properties and causing harm. The word vandalism as used in conjunction with pipeline refers to the purposive or intentional act of destroying pipelines with the objective to either steal the petroleum products therein or inflicting punishment on the owner(s) of the property in response to perceived hostile behaviour of the owner(s).

Christensen, Johnson, & Brookes (1992) describe oil pipeline vandalism as a "productive force that fought against the exploration of a capacity system" across the world. Even though different people or nations may have a contrary opinion to the concept of vandalism and what 'acts' constitute vandalism, the concept could be applied to different scenarios such as; play vandalism, for example, breaking of window panels, cars, and other people's facilities, tactical vandalism which includes, sabotage at the workplace or organisational facilities (Umar & Othman, 2017), vandalism as a source of revenge, where individuals feel cheated (vindictive behaviour) and vandalism out of frustration, anger and exasperation (malicious vandalism) (Umar & Othman, 2017). Also, Aishatu, Chukwudi & Hauwa'u (2016) describes vandalism from the civil realm as the wilful destruction of public or government property in keeping with criminal or political intent. While vandalism in the oil and gas industries implies the breaking of oil pipelines with the aim to scoop petroleum product for personal and or group use.

According to Udofia & Joel (2012), pipeline vandalism refers to the wilful or deliberate act of damaging petroleum pipelines with the sole aim of stealing crude oil and associated petroleum products. The essence of pipeline vandalism is the blowing up of pipelines in order to create shortages of petroleum products for home and international markets and sent signals for sudden

increase in the crude oil prices (United Nations Development Report, 2006). In the Nigerian oil and gas industry, the effects of pipeline vandalism among others include huge economic losses from pipeline and plant shutdown, environmental pollution, fire outbreaks usually resulting in loss of lives. Scarcity and shortage of petroleum products as well as decrease in electricity supply with the attendant socio-economic problems can also be attributed to pipeline vandalism. Pipeline vandalization, as it is used in this context, refers to illegal or unauthorised activities that involve the destruction of oil pipelines to disrupt supply or the puncturing of oil pipelines to siphon crude oil or its refined products in order to appropriate it for personal use or for sale in the black market or any other outlet. It includes such acts as oil bunkering, breaking oil pipelines to siphon fuel, scooping fuel from burst oil pipes and the deliberate act of oil terrorism. In Nigeria, pipeline vandalization is usually regarded as an act of sabotage. It is a capital offence under the Petroleum Act and is covered by the Criminal Justice Decree of 1975 (miscellaneous provisions) (Phil-Eze, 2004). In recent times, the incidence of pipeline vandalization and the associated fire disaster has caused serious destruction of the ecosystem of host communities, oil spillage and environmental pollution, destruction of farmlands and properties, and the loss of lives.

Concept of Human Security

Human security is a new and broadened approach in security studies which seeks to explicate the global vulnerabilities and examine how poverty, environment and social interaction generate conflict and increasingly poses threat to human existentialism (Orhero, 2020). Central to this approach is the understanding that human security deprivations can undermine peace and stability within and between states and/or individuals, whereas an overemphasis on state security can be detrimental to human welfare. Annan (2013) posited that the concept of human security had for long been interpreted narrowly, as the security of people living in countries against external influence and aggression (UNDP, 1994). His assertion is a realist idea, which has always been the nature of the many countries, whereby states tend to focus on protecting their territories and national interests, while neglecting the security of the people.

The idea of human security, according to Orhero (2020) was nurtured, popularized and prioritized as a dynamic and practical policy agenda for addressing widespread and cross-cutting threats facing the people in the 1994 UNDP Human Development Report. In that report, the United Nations Development Programme developed a new dimension of human security, characterizing the term as a child who did not die, disease that does not spread, a job that was not cut, an ethnic tension that did not explode in violence, a dissident who was not silenced. Thus, the UNDP (1994) defines human security as the degree to which the welfare of individuals is protected and advanced. The insecurities that threatened human survival or the safety of daily life, or imperil the natural dignity of men and women or expose human beings to the uncertainty of disease and pestilence, or subject vulnerable people to abrupt penury related to economic downturns demand that special attention be paid to the dangers of sudden deprivation. Human security demands protection from these dangers and the empowerment of people so that they can cope with and when possible, overcome these hazards. The report therefore sees human security as safety from such chronic threats as hunger, disease and repression, and protection from sudden and hurtful disruptions in the patterns of daily life. It further argued that the scope of global security should be broadened to include threats in seven areas: food security, economic security, health security, community security, political security, personal security and environmental security. In addition, Best (2012) posits that a distinctive element of human security is its focus on early prevention to minimize the impacts of the insecurity, to engender long-term solutions and to build human capacities for undertaking prevention. In this regard, human security:

- a. Address the root causes of human insecurity;
- b. Emphasizes early prevention rather than late intervention – thereby, more cost – effective;
- c. Encourages strategies concerned with the development of mechanisms for prevention, the mitigation of harmful effects when downturns occur and ultimately, with helping victims to cope.

Human security according to the African Union (2005) is:

Freedom from fear’ is being free from conflict/violence or any factor that causes physical harm. While ‘freedom from want’ is being free from hunger or poverty. It also entails being able to take actions without fear or external pressure. However, it is not almost impossible for one to be able to take actions without any form of external pressure or influence, nor is it totally possible for one to neither have full access to their wants nor live totally without fear (p.11)

Relating the circumstances to this paper, human security can be defined as a consciously coordinated process of formulating and implementing human development policies matched with adequate resources to protect, provide and sustain the wellbeing of every individual in a state. Absence of human security means sabotage of human life. It is worthy of note that the trend and menace of crude oil theft through pipeline vandalism is as a result of economic deprivation by the government for so many years. The people have no choice than to strive for alternative source of income that is geometrically faster than envisage by the government. However, the fear is the devastating effect of these activities on human security. There have been reports of short life-span, health implication, environmental degradation, pipeline explosions and inferno which have claimed the lives of many individuals. Human security has been affected by increasing levels of violence, poor living, economic instability, and environmental degradation, to mention a few. According to Akokpari (2007) and the report of the UNDP (1994), threats to human security are seen and can be described adequately in the various areas; economic, food, health, environmental, personal, community and political security. The UNDP report discussed the followings as ingredients of human security.

Method

The paper adopted the mixed research design approach. The population of the study consisted of the total population of nine (9) Niger Delta States 44,112,908. This is based on the National Bureau of Statistics (NBS) and the National Population Commission (NPC) 2022 as projected.

Table 1: State-by-State Projected Population in the Niger-Delta Area of Nigeria

S/N	States	Population
1	Abia	3,841,943
2	Akwa Ibom	5,451,581
3	Bayelsa	2,934,725
4	Cross Rivers	4,175,020
5	Delta	5,636,100
6	Edo	4,461,137
7	Imo	5,167,722
8	Ondo	4,969,707
9	Rivers	7,474,973
	TOTAL	44,112,908

Source: National Population Commission and National Bureau of Statistics, 2022

Sample size for the study was derived via Taro Yamane's formula.

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

Where:

N is the population (44112908)

1 is constant

e is the sampling error

n is the sample size

Adopting substitution method

$$n = \frac{44112908}{1 + 44112908(0.05)^2} = \frac{44112908}{1 + 44112908 \times 0.0025} = \frac{44112908}{1 + 110282.27} = \frac{44112908}{110283.27} = 399.99$$

Sample size (n) = 400

Based on the sample size derived by using Taro Yamane's formula, the paper distributed questionnaire according to the number of states in the Niger-Delta. The purposive sampling method was adopted to spread the sample among the nine (9) Niger Delta States.

The main instrument for data collection was the questionnaire. Documentary, materials such as journal articles, published and unpublished books were also consulted, while interviews complimented needed data. The questionnaire was structured in 4-point modified likert scale of: strongly agreed, agreed, disagreed, and strongly disagreed.

Table were employed to analyse data generated for the study. Responses from the respondents were arranged, grouped, tabulated and analysed using the simple percentage statistical method.

Thus:

$$\frac{f}{N} \times \frac{100}{1}$$

Where;

f = frequency of response

N = number of respondents

By this method, it means that the degree of percentage score of one response to another or others will determine the acceptability or rejection of a particular statement while hypotheses would be tested using Chi-Square (X^2). The formula for Chi- Square

$$X^2 = \frac{(O - E)^2}{E}$$

Where:

O = Observed frequencies

E = Theoretical or expected frequencies

Degree of freedom (df) = (R-1)(C-1)

Level of Significance = 0.05%.

Decision Rule: The null hypothesis is rejected if the value of chi-square (X^2) is higher than the table value.

Data Presentation

Table 2: Socio-demographic Analysis of Response Rate

Administration of Questionnaires	Frequency (f)	Percentage (%)
Number of questionnaires administered	400	100
Number of questionnaires not returned	5	1
Number of questionnaires retrieved	395	99
Number of invalid questionnaire (illegible)	5	1
Number of questionnaire valid for the study	390	99

Source: Field Work, 2025

The table above reveal that out of the 400 questionnaire that were administered to respondents, 5 respondents making 1% of the questionnaire were not returned, 395 respondents representing 99% were retrieved, 5 of the questionnaires making 1% were illegible while 390 were successfully completed and valid for proper analysis. The response rate is 99% which is a mark of excellent for the study.

Table 3: Socio-demographic Analysis of Age Bracket of Respondents

Age bracket of Respondents	Frequency (f)	Percentage (%)
20 – 29	100	26
30 – 49	200	51
50 – 60	90	23
Total	390	100

Source: Field Work, 2025

Table 3 above shows that 100 respondents representing 32% are within the age bracket of 20 - 29 years; 200 (51%) are within the age bracket of 30 - 49 years; 90 representing 23% fall in the age bracket of 50 – 60 years and above. This indicates that community members and NNPCCL officials in the Niger Delta Area of Nigeria has a productive number of respondents that fall within the age brackets of 20 - 29 and 30 - 49 years in terms of age. It also implies that those within the age bracket of 50 – 60 years are still very useful because they have witnessed the effect of oil pipeline vandalism on human security in the Niger Delta. Based on their age and experience, their responses enable them to draw inferences or provide vital information. Their views are highly regarded.

Table 4: Socio-demographic Analysis of Category of Respondents

Category of Respondents	Frequency (f)	Percentage (%)
NNPCL Staff	190	49
Community Members	200	51
Total	390	100

Source: Field Work, 2025

Table 4 above shows that 190 respondents representing 49% are NNPCCL Staff while 200 respondents representing 51% are Community members. This indicates that respondents are mainly community members. Irrespective of their categories, their responses do not in any way interfere with the outcomes of the study as they are not bias in their views. This indicates that

the issues under investigation are not limited to a particular category but provided a general view on the residents of Niger Delta Area.

Table 5: Socio-demographic Analysis of Academic Background of Respondents

Educational Qualifications	Frequency (f)	Percentage (%)
HND/BSc/PGD	290	74
MSc/MPA/MBA/PhD	100	26
Total	390	100

Source: Field Work, 2025

Table 5 shows the educational qualifications of respondents and thus revealed that 290 respondents making 74% possess the Higher National Diploma (HND)/Bachelor of Science (BSc) and Postgraduate Diploma (PGD) while 100 respondents representing 21% are holders of Master of Business Administration (MBA)/Master of Public Administration (MPA)/Master of Science (MSc) and Doctor of Philosophy (Ph.D). This shows that the respondents are dominated by different levels of graduates with various degree of certificates. This suggests that the respondents have good knowledge about the effect of pipeline vandalism on human security.

Data Analysis

What is the relationship between petroleum pipeline vandalism and human security in the Niger Delta Area of Nigeria?

Table 6: Computation of percentage response on the relationship between petroleum pipeline vandalism and human security in the Niger Delta Area of Nigeria.

Questionnaire	Respondents	SA f (%)	A f (%)	D f (%)	SD f (%)	Total
Crude oil pipeline vandalism stimulates decline in revenue in human security in the Niger Delta.	NNPCL	80 21%	70 18%	20 5%	20 5%	190 49%
	Dwellers	100 26%	50 13%	40 10%	10 2%	200 51%
	Total	180 47%	120 31%	60 15%	30 7%	390 100%
Oil pipeline vandalism is responsible for low production of petroleum products in human security in the Niger Delta.	NNPCL	50 13%	80 21%	50 13%	10 2%	190 49%
	Dwellers	60 15%	100 26%	20 5%	20 5%	200 51%
	Total	110 28%	180 47%	70 18%	30 7%	390 100%
Vandalism causes hike in the prices of hydrocarbon products in the Niger Delta	NNPCL	95 24%	80 21%	15 4%	0 0%	190 49%
	Dwellers	35 9%	130 33%	30 8%	5 1%	200 51%
	Total	130 33%	210 54%	45 12%	5 1%	390 100%
	NNPCL	65 17%	95 24%	15 4%	15 4%	190 49%

Power failure in pipeline vandalism negatively affects human security in the Niger Delta.	Dwellers	70	105	15	10	200
		18%	27%	4%	2%	51%
	Total	135	200	30	25	390
		35%	51%	4%	6%	100%
	NNPCL	65	100	20	5	190
		16%	26%	5%	1%	49%
Weak institutions and high rate of corruption encourage oil pipeline vandalism the Niger Delta.	Dwellers	65	110	25	0	200
		16%	28%	6%	0%	51%
	Total	130	210	45	5	390
		32%	55%	12%	1%	100%

Source: Fieldwork, 2025.

Table 6 shows the views of respondents on the relationship between petroleum pipeline vandalism and human security in the Niger Delta. In their views on whether Crude oil pipeline vandalism stimulates decline in revenue in human security in the Niger Delta, the table shows that 180 respondents which represent 46% of the 390 respondents strongly agreed with 120 respondents representing 31% agreed that Crude oil pipeline vandalism stimulates decline in revenue in human security in the Niger Delta. However, 60 (15%) “disagreed” while 30 (8%) “strongly disagreed” that Crude oil pipeline vandalism stimulates decline in revenue in human security in the Niger Delta. This infers that Crude oil pipeline vandalism stimulates decline in revenue in human security in the Niger Delta Area of Nigeria.

The table also reveals that 110 (28%) and 180 (46%) respondents confirmed to “strongly agreed” and “agreed” that Oil pipeline vandalism is responsible for low production of petroleum products in human security in the Niger Delta. 70 respondents representing 18% disagreed with 30 respondents which represents 8% strongly disagreed with the claim that Oil pipeline vandalism is responsible for low production of petroleum products in human security in the Niger Delta. It indicates that Oil pipeline vandalism is responsible for low production of petroleum products in human security in the Niger Delta Area of Nigeria.

On whether Vandalism causes hike in the prices of hydrocarbon products in the Niger Delta, 130 (33%) respondents strongly agreed, with 120 respondents representing 54% agreed that Vandalism causes hike in the prices of hydrocarbon products in the Niger Delta. While 45 respondents represent 12% disagreed with 5 respondents representing 1% strongly disagreed that Vandalism causes hike in the prices of hydrocarbon products in the Niger Delta. This implies that Vandalism causes hike in the prices of hydrocarbon products in the Niger Delta Area of Nigeria.

On whether Power failure in pipeline vandalism negatively affects human security in the Niger Delta, the table above shows that 135 (35%) respondents strongly agreed and 200 (51%) agreed that Power failure in pipeline vandalism negatively affects human security in the Niger Delta. 30 representing 8% and 25 representing 6% of the respondents state that Power failure in pipeline vandalism negatively affects human security in the Niger Delta. This implies that Power failure in pipeline vandalism negatively affects human security in the Niger Delta Area of Nigeria.

The question of whether Weak institutions and high rate of corruption encourage oil pipeline vandalism the Niger Delta, the table above also displays 175 respondents representing 45% “strongly agreed” and 190 which represents 49% “agreed” that Weak institutions and high rate

of corruption encourage oil pipeline vandalism the Niger Delta. 20 respondents which represent 5% disagreed while 5 respondents with 1% strongly disagreed on Weak institutions and high rate of corruption encourage oil pipeline vandalism the Niger Delta. The majority of the respondents strongly agreed that Weak institutions and high rate of corruption encourage oil pipeline vandalism the Niger Delta Area of Nigeria.

Test of Hypothesis

Ho: There is no relationship between petroleum pipeline vandalism and human security in the Niger Delta area of Nigeria. Item 5 of table 6 of the questionnaire which states that “weak institutions and high rate of corruption encourage oil pipeline vandalism in the Niger Delta” was employed with chi-square (X^2) thus:

$$X^2 = \sum \frac{(fo-fe)^2}{fe}$$

Table 7: Shows the various responses for calculating Expected Frequency (Fe)

Respondent	Frequency of Response				Total
	SA	A	D	SD	
NNPCL	65	100	20	5	190
Dwellers	65	110	25	0	200
Total	130	210	45	5	390

Source: Survey Data, 2025

Expected Frequency (Fe) = $\frac{(\text{Row total})(\text{Column total})}{\text{Cumulative total}}$

Computation of Expected Frequency (Fe)

a.	Fe	=	(130 × 190)	÷	390	= 63
b.	Fe	=	(130 × 200)	÷	390	= 67
c.	Fe	=	(210 × 190)	÷	390	= 102
d.	Fe	=	(210 × 200)	÷	390	= 108
e.	Fe	=	(45 × 190)	÷	390	= 22
f.	Fe	=	(45 × 200)	÷	390	= 23
g.	Fe	=	(5 × 190)	÷	390	= 2
h.	Fe	=	(5 × 200)	÷	390	= 3

Source: Survey Data, 2025

Computation of Chi-Square (X^2)

Cells	Fo	Fe	Fo - Fe	(Fo - Fe) ²	$\sum (Fo - Fe)^2 \div Fe$
A	65	63	2	4	0.063
B	65	67	-2	4	0.060
C	100	102	-2	4	0.039
D	110	108	2	4	0.037
E	20	22	-2	4	0.181
F	25	23	2	4	0.174
G	0	2	-2	4	2
H	5	3	2	4	1.333
X²					3.887

Source: Survey Data, 2025

Degree of Freedom (df) = (R-1) (C-1) = (2-1) (4-1) = 3.

Level of Significance = 5% (0.05)

Table Value = 7.81

Chi-Square (X^2) = 3.887

Decision Rule: The null hypothesis is rejected if the value of X^2 is greater than the table value. This indicates that there is a significant relationship between petroleum pipeline vandalism and human security in the Niger Delta since the calculated value of X^2 (3.887) is less than the table value of 7.81

From the result, it is shown that a very strong relationship exists between crude oil pipeline vandalism and human security. The table value of 7.81 indicates the magnitude and strength of this relationship. Therefore, the null hypothesis earlier stated is hereby rejected and alternate hypothesis accepted. Thus, there is a relationship between crude oil pipeline vandalism and human security in Niger Delta Area of Nigeria. The position of this hypothesis is further strengthened by 240 respondents representing 92.3% who revealed that pipeline vandalism stimulates decline in oil revenue.

Discussion

The relationship between crude oil pipeline vandalism and human security in the Niger Delta Area of Nigeria: Data analysis shows in table 6 the views of respondents on the relationship between petroleum pipeline vandalism and human security in the Niger Delta. In their views on whether crude oil pipeline vandalism stimulates decline in revenue in human security in the Niger Delta, 180 respondents which represent 46% of the 390 respondents strongly agreed with 120 respondents representing 31% agreed that crude oil pipeline vandalism stimulates decline in revenue in human security in the Niger Delta. 110 (28%) and 180 (46%) respondents confirmed to “strongly agreed” and “agreed” that oil pipeline vandalism is responsible for low production of petroleum products in human security in the Niger Delta. On whether vandalism causes hike in the prices of hydrocarbon products in the Niger Delta, 130 (33%) respondents strongly agreed, with 120 respondents representing 54% agreed that vandalism causes hike in the prices of hydrocarbon products in the Niger Delta. 135 (35%) respondents strongly agreed and 200 (51%) agreed that power failure in pipeline vandalism negatively affects human security in the Niger Delta. The table above also displays 175 respondents representing 45% “strongly agreed” and 190 which represents 49% “agreed” that weak institutions and high rate of corruption encourage oil pipeline vandalism the Niger Delta.

Crude oil exploration is a source of significant revenue in Africa via trade and investment since its discovery in the mid-19th Century (Adeola, Akingboye, Ore, Oluwajana, Adewole, Olawade & Oguntimehin, 2020). The scholars opined that crude oil has bolstered the continent’s economy and improved the wellbeing of the citizenry. The scholars stressed that:

The state has suffered from conflicts due to uneven redistribution of crude oil revenue and severe environmental pollution. Advancements in geophysical survey techniques, such as magnetic and gravity methods, to seismic methods, have made the commercial exploration of crude oil possible for some other countries in Africa apart from Nigeria, Angola, Algeria, Libya, and Egypt (p.1).

In response to the above, the interviewees spoke strongly concerning the negative effect the activities of vandals have on human security in Niger Delta. The interviewees argued that the current economic situation in the state is unhealthy.

The findings are also in line with Akpan (2013) who commented that most people are victims of crude oil pipeline vandalism because of their social status in the community. He argued that this is so because vandals believed that prominent people of high social status and their family members hardly suffer the economic hardship where all forms of hard currencies are within their reach. He stressed that the only surviving business that can be ventured into to reduce the gap between the rich and the poor is syphoning of petroleum products through crude oil pipeline vandalism not minding the effects. Also, the results from our primary and secondary data indicate that crude oil pipeline vandalism often times causes human security slur when the proceeds from this illicit business are not investigated. The result shows that poverty induced community has collaborated with vandals of crude oil pipeline so as to get some levels of financial inducements. This attitude has a significant relationship with the socio-economic wellbeing of the state. The result is consistent with the report of the respondent below:

The issue of poverty and unemployment of youths as well as social injustice and unfair distribution of the nation's resources are potent causes of crude oil pipeline vandalism in state. These factors have caused the youths to engage in crude oil pipeline vandalism and criminal activities as a way of getting their share of the nation wealth. This notwithstanding has an adverse relationship with the human security (M. Boma, personal communication, January 20, 2025).

The findings are also in agreement with Mmeje, Ayuba & Muhammed (2017) who maintained that crude oil pipeline vandalism has plagued human security and has had spill-over effect on some jobless youths and graduates who see crude oil pipeline vandalism as lucrative and alternative means of making money, acquiring economic power and getting out of poverty.

In line with the result of hypothesis test, Boris (2015), noted that this practise is responsible for low production of hydrocarbon and hike in the price of products in Nigeria. The adequate utilization of crude oil is an important indicator of the country's wealth in national development. No meaningful development will take place when the human security is not guarantee in terms of economic survival. It is the government responsibility to invest into human security through its economic policies and programmes that would engender economic enhancement of individual. This could have reduced the spate of this illicit venture that tantamount human security. An interviewee revealed that:

The emergence and entrenchment of crude oil pipeline vandalism in Niger Delta has its manifestation within various components. The activities of vandals have reduced public revenue to the benefit of few, responsible for poor production, and hike in prices of products (M. Tankuro, personal communication, January 20, 2025).

Conclusion/Recommendations

The study concluded that there was a high level of corruption, inordinate ambition for wealth making, collaboration among the company staff, security agents and the vandals, power failure, low revenue, scarcity of products were significant causes of oil pipeline vandalism and human security in Niger Delta Area of Nigeria. Poor policing, crime collaboration, wide spread

poverty, sabotage, etc were also identified causes of crude oil pipeline vandalism. Environmental degradation, loss of human lives and property, economic stagnation, environmental pollution, conflict, fire outbreak/explosion and human insecurity, etc were considerable effects of oil pipeline vandalism. In view of the numerous negative effect and other issues raised, the paper concluded that petroleum pipeline vandalism affects human security in the Niger Delta Area of Nigeria.

The study revealed that the refinery which has about 24 networks of crude oil pipelines and travel about 55km distance to the refinery complex for processing have been punctured or destroyed by a network of actors. The catastrophic effects of crude oil pipeline vandalism as identified by this paper include loss of lives and property as a result of pipeline fire explosion, health/medical challenges leading to untimely death, economic losses, price hike, scarcity of hydrocarbon products, environmental degradation, etc.

The paper thus recommends that; the Federal Government should liaise with the oil companies to provide a practical documented procedure that would get rid of the manual method of monitoring oil spillage, illegal bunkering, crude oil theft and illicit sites/dump. This approach should be backed by security personnel and adopt the computerised approach which involves the use of software drones in monitoring flow of crude oil in pipelines. This will enable the use of mobile application software/devices by security agents to track any incidence of pipeline vandalization in crude oil pipeline route within the area.

Also, the federal government should strengthen its recent adopted local security surveillance network for monitoring oil pipelines installations within the coastal communities of the Niger Delta Area of Nigeria, as this has proven to be effective. It will ultimately improve human security.

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