

Pipeline Vandalisation and Its Implications on Oil Host Communities of the Niger Delta (2003-2015)

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Abstract: Vandalisation of oil pipelines with its resultant effects of oil spillage, and fire explosion appears to have led to death toll. This has become a nightmare to the Nigerian government on how the menace could be curbed. This prompted the study on pipeline vandalisation and its implications on oil host communities of the Niger Delta between 2003 and 2015. Specifically, the study determined the effect of incidences of oil pipeline vandalisation and fire explosion on death tolls in the oil host communities. The theoretical thrust of the paper was the “frustration-aggression theory (FAT)” of John Dollard. Pre-formulated tables which are contemporary from oil producing and oil regulatory firms as well as other institutions in the oil industry in the Niger Delta were obtained and systematically analyzed. The study adopted 'ex-post facto' research design because of its analytical anchor on already documented events. Regression and correlation were used for data analysis. The findings revealed that the incidences of oil pipeline vandalisation and fire explosion insignificantly contributed to death tolls in the oil host communities of Niger Delta.

Keywords: Oil Pipeline Vandalism, Oil Host communities, Death Loss, Niger Delta, Community Development.

1. INTRODUCTION

The United States Energy Information Administration-EIA (2016) postulates that Nigeria is the largest oil producer in Africa, holds the largest natural gas reserves on the continent, and was the world's fourth leading exporter of liquefied natural gas (LNG) in 2015. This information is corroborated by The Nigerian National Petroleum Corporation – NNPC (2017) further notes that Nigeria has a maximum production capacity of 2.5 million barrels per day and ranks the sixth largest producing country in the world. Although Nigeria is the leading oil producer in Africa, production is affected by supply disruptions which have resulted in production shortfalls as high as 750,000 barrels per day (bbl/d) in May 2016 (EIA, 2016). According to Nigeria's Extractive Industries Transparency Initiative (2013), Nigeria is estimated to have lost \$10.9 billion in revenues through oil theft from 2009- 2011, (United States Energy Information Administration (EIA) 2013). Latest figures indicate that Nigeria lost \$4.8 Billion to militant attacks in 2016. (Europe Newsweek, 2016).

Oil and natural gas industries are primarily located in the Niger Delta region, where it has been a source of conflict. Local groups seeking a share of the wealth often attack the oil infrastructure, forcing companies to declare force majeure (a legal clause that allows a party to not satisfy contractual agreements because of circumstances that are beyond their control that prevent them from fulfilling contractual obligations) on oil shipments (EIA 2013). At the same time, oil theft, commonly referred to as "bunkering," leads to pipeline damage that is often severe, causing loss of production, pollution, and forcing companies to shut in production. The Organisation of petroleum Exporting Countries (OPEC 2016) estimates that oil and natural gas export revenue accounted for about 90% of total export revenue of Nigeria in 2015.

Several reasons have been adduced for the prevalence of oil pipeline vandalism in the Niger Delta. Some attribute it to greed on the part of oil producing communities in demanding compensations and oil royalties from the MNOC's or poverty. Others see the reason as underdevelopment, unemployment, neglect, and frustration. The major Multinational Oil Companies (MNO) in Nigeria's oil and natural gas sectors are Shell, ExxonMobil, Chevron, Total, and Eni (Agip). This study is presented in sections. Next is the statement of problem. Following is the objective and hypothesis. Methodology then comes in. The paper ends with discussions and findings

1.1 Statement of the Problem:

Oil production in Nigeria began in the oil Rich Bayelsa State in 1956 in the small town of Oloibiri in South-South Nigeria. In the words of Olorunsogo (2011), oil generated in the Niger Delta since the 1960's is estimated at about US \$600million, yet a large percentage of the oil producing communities wallow in extreme hunger and want with little or no access to infrastructural facilities such as good water source for the host communities. According to E.I.A (2013) "the Niger Delta region suffers from environmental damages caused by pipeline sabotage from oil theft and oil spills from illegal refineries. NNPC (2016), records that there were fourteen thousand six hundred and seven (14,607) cases of oil pipeline vandalisation in the oil pipeline networks in the Niger Delta from 2003 to 2015. These numerous cases of oil pipeline vandalism have had several effects which include oil spills, environmental pollution (land, air, and water), loss of lives, loss of farmlands, population displacement, destruction of household property due to fire explosions, loss of employment, loss of income, decline in agricultural production, and environmental degradation. Oviasuyi and Uwadiae (2010) opine that the laws put in place by the federal government of Nigeria for the exploitation of oil and gas resources in the Niger-Delta by the MNOC's did not take the host communities into consideration, and therefore, have been flagrantly abused by the oil companies over the years.

Oviasuyi and Uwadiae (2010) further maintains that the Niger Delta region has become environmentally degraded through oil spillages; gas flaring which has led to serious atmospheric pollution; ground water and soil contamination; constant heat around the flare pits which has resulted in the loss of aquatic lives; indiscriminate construction of canals and waste dumping; and poor conduct of Environmental Impact Assessments (EIA) by oil and gas companies. Thus, the Niger-Delta has become an ecological wasteland. Several major rivers are heavily polluted; farmlands are under acid rain and oil spills, and carbon dioxide emissions in the area are among the highest in the world. The perception of frustration began in the 1980's after several manifestations of environmental pollution and oil spills which are effects of oil pipeline vandalisation in the host communities. This frustrating effects led to the formation in 1990 of the movement for the survival of Ogoni people (Mosop) who constructed the Ogoni Bills of Right, and the formation of the Ijaw youth congress (IYC) which came out with the Kaiama Declaration on December 11,1998.

Since after the kaiama Declaration of 1998, over 20 militant youth organization such as the Niger Delta people volunteer force (NDPVF), Movement for emancipation of the Niger Delta (MEND), Niger Delta Vigilante, and the Niger Delta Peoples Salvation Front have emerged. Ibeanu (2000) notes those years of military repression have left the Niger Delta people brutalized but militarized. The goal of these organizations is to increase the spate of oil pipeline vandalisation and other forms of disrupting the activities of the Multi-National Oil Companies (MNOC'S) in the region so as to compel the government and MNOC's in the region to negotiate with them for the purpose of developing the Niger Delta region (Etekpe and Okolo, 2010). Other groups such the Movement for the Actualization of the Sovereign State of Biafra (MASSOB)) and the Indigenous People of Biafra (IPOB) agitations are also outcomes of unseated grievances due to neglect and deprivation. The emergence of the Niger Delta Avengers in 2016 and the stream of oil facility explosions to their credit since February 2016 further indicate that the grievance is still unseated. The group has threatened to blow-up all visible Nigerian oil installations and paralyzes all oil industry except their ten-point demand was met. This spate of oil pipeline vandalisation has often had great effects on the oil host communities. In the Nigerian Constitution, all Minerals, oil and gas belong to the federal government. Section 44(3) states that:

Notwithstanding the foregoing provision of this section, the entire property in and control of all minerals, minerals oils, and natural gas in, under or upon any land in Nigeria or in, under or upon the territorial waters and the exclusive economic zone of Nigeria shall vest in the Government of the federation and shall be managed in such manner as may be prescribed by the National Assembly (Federal Republic of Nigeria, 1999 constitution).

The Petroleum Act (1969) and the land use Decree of 1978 all serve as instruments of dispossession against the oil

producing communities thus depriving them of their right to property. Brume (2006) opines that oil pipeline vandalisation is a widespread expression of discontent and frustration due to deprivation. The Nigerian Petroleum Act, the National Constitution, as well as the oil and gas legal frameworks does not give adequate security to the oil producing communities in terms of protecting them from the effects of oil pipeline vandalism. The oil host communities are thus deprived, neglected, marginalized and repressed in the midst of poverty, environmental degradation and underdevelopment, while the oil revenue is carted away to develop other well to do individuals, communities, and regions thus leaving the host communities with the attendant effects. In the words of Brume (2006):

When discontent is left unseated or unmitigated, the form of its expression grows horizontally and vertically; horizontally in that it gains a greater and greater followership both in the Niger Delta region and beyond and vertically, in that this expression of discontent escalates-from mere quest for development and unemployment or equitable treatment with others, to the current language of resource control.

1.2 Objective of the study:

- To determine the effect of incidences of oil pipeline vandalisation and fire explosion on death tolls in the Oil host communities of Niger Delta.

1.3 Research question:

- What is the predictive strength of incidences of oil pipeline vandalisation and fire explosion on death tolls in the Oil host communities of Niger Delta?

1.4 Hypothesis:

H₀. Incidences of oil pipeline vandalisation and fire explosion have no significant positive effect on death tolls in the oil host communities of Niger Delta.

2. REVIEW OF RELATED LITERATURE

2.1 Oil Companies and Host Communities in the Niger Delta:

Oil production in Nigeria began in the oil-rich Bayelsa State in 1956 in the small town Oloibiri in South-South Nigeria. The Niger Delta region is Nigeria's largest wetland, and the third largest wetland in the world. With a steadily growing population now put at over 40 million people as of 2006, it accounts for more than 23% of Nigeria's total population of over 140 million (National Population Commission, 2006). The area produced 96% of the National foreign exchange earnings of Nigeria in 2012. (EIA 2013). The Niger Delta oil producing communities according to the World Bank (2008) constitutes about forty ethnic groups who speak over two hundred and fifty languages and dialects. These ethnic groups make up the nine states of the Niger Delta of Nigeria namely; Akwa Ibom, Bayelsa, Cross River, Delta, Rivers, Abia, Edo, Imo and Ondo. There are also agitations by Anambra, Lagos, and Kogi States to be included among the Niger Delta states (host communities) due to oil reserves found in these states. Braide, (2013), a communication expert who was also involved in the implementation of the Niger Delta Amnesty Program defined a host community as a community where the oil is extracted from, and houses the facilities for the exploration and extraction of oil.

2.2 Oil Pipeline Vandalism:

The concepts of oil pipeline vandalisation and oil host communities are pivotal to this discourse and as such, their meanings deserve to be clarified. By the Nigerian constitution, all minerals, oil and gas in Nigeria belong to the federal government. Section 44(3) states that:

notwithstanding the foregoing provisions of this section, the entire property in and control of all minerals, mineral oils and natural gas in, under or upon any land in Nigeria or in, under or upon the territorial waters and the Exclusive Economic Zone of Nigeria shall vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National Assembly" (Federal Republic of Nigeria 1999). Oil extraction outside the framework of an agreement with the federal government is illegal, as is the possession of crude oil by anyone not licensed to do so. The government has enacted specific laws to address the issue of oil pipeline vandalism and sabotage and, in doing so, have identified the various state and federal security agencies to execute the laws as a way of protecting Nigeria's energy

network (Etekpe and Okolo 2010).

The federal government controls revenues from crude oil and sets up a formula for distributing them to the other tiers of government. The Petroleum Production and Distribution (Anti-Sabotage) Act 353 of 1990, for example, defined oil pipeline vandalization or saboteur as any:

person who does; aids another person; or incites, counsels or procures any other person to do anything with intent to obstruct or prevent the production or distribution of petroleum products in any part of Nigeria; or willfully does anything with intent to obstruct or prevent the procurement of petroleum products for distribution in any part of Nigeria; or willfully does anything in respect of any vehicle or any public highway with intent to obstruct or prevent the use of that vehicle or that public highway for the distribution of petroleum products.

Simplifying this definition, Onouha (2008), states that oil pipeline vandalization is “the illegal or un-authorized act of destroying or puncturing of oil pipelines so as to disrupt supply or to siphon crude oil or its refined products for purposes of appropriating it for personal use or for sale on 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. This definition can be applied to individuals, groups, and/or company’s involved in such illegal activities regardless of their ultimate objectives. Oil pipeline vandalization is often perpetrated through (a) small cargoes that navigate the swampy, shallow waters of the Niger Delta puncturing oil pipelines to siphon the oil into small tanks (b) Stealing crude oil direct from the well head (c) Filling tankers at export terminals (EIA, 2013).

These oil products are taken to illegal refineries along the Niger Delta's swampy bush areas and sold domestically and regionally while other portions make their way to the international market. Komolafe (2013) defines oil pipeline vandalisation as the illegal or unauthorized act of destroying or puncturing of oil pipelines with the intent to disrupt supply or steal the crude oil or its refined products for the purpose of appropriating it for personal use or for sale in the black market or any other outlet. (ThisDay Live, June 30, 2013)

2.3 Implications of oil pipeline vandalisation:

Income Loss: The implications of oil pipeline vandalization in the Niger Delta are numerous and a great threat to the national economy. Yakubu (2014) former Group Managing Director (GMD) of NNPC noted that Nigeria lost 109.5m barrels of oil in 2013 to pipeline vandalism. Yakubu (2014) further noted that incessant vandalisation of crude oil export pipelines and domestic crude oil petroleum in product pipelines impacted negatively on the economy. According to him, what Nigeria lost in 2013 was equivalent to the total output of Equatorial guinea and larger than the entire production of Ghana, Congo Brazzaville, Cameroon and Gabon. 109.5m barrels of oil could translate to N 1.4b as total loss to pipeline vandalisation in 2013. Barkindo (2010) also quoted the NNPC as losing ₦174billion to pipeline vandalism between 1999 and 2009 (10 years period). The amount translates to a average of ₦17.4 billion per annum.

Komolafe (2013) also notes that “Nigeria lost a total of about ₦163 billion from crude oil and petroleum products pipeline losses from 2009 – 2012 alone not adding the associated costs. Komolafe (2013) argues that this loss would have been able to take care of the budget of two states in the country. Allison-Madueke (2013) notes that about ₦960 billion was being lost to oil pipeline vandalism annually. The former Petroleum minister described the problem of oil pipeline vandalism as a complex one that could not be addressed superficially. The Nigeria’s Executive Industries Transparency Initiative- a government funded body have quoted that Nigeria is estimated to have lost \$10.9 billion (₦1.689 trillion) in revenues through oil theft from 2009 – 2011 (EIA 2013).

All the losses noted above are income that the federal government could have used to further develop the Niger delta and the nation at large. Thus, an income loss to the nation due to oil pipeline vandalisation could have a negative effect on the investment capital available for the oil host communities of the Niger delta. Komolafe (2013) further submits that the losses due to oil pipeline vandalisation include (a) economic sabotage (b) environmental degradation, and destruction of a national asset (pipeline).

2.4 Oil Spills due to incidences of oil pipeline vandalisation:

The NNPC and the federal government figures for pipeline vandalism incidence are highly debated in most circles.

According to the EIA record (2013), the amount spilled because of oil theft versus aging infrastructure and operational failures is highly debated among oil companies and environmental and human right groups. Shell in her oil spill data (2012) reported that less than 30% of spills from SPDC facilities are due to aging infrastructure and corrosion while the rest 70% are due to vandalism. Earlier in 2010, the shell sustainability report put the figure, at 20% for rapture, and 80% for sabotage. The SPDC figures above for 2010, 2011 and 2012 differ sharply from her figures in 1995. In her 1995 reports shell admitted that 71% of oil spills were due to corrosion and operational failures while 29% were due to sabotage.

Table 1. SPDC 9- Year oil spill incidence data (2007-2015)

| Year | Incidence of Oil-Spills due to sabotage/theft | Incidence of Operational failures | Total incidence of Oil-spills per year |
|-------|---|-----------------------------------|--|
| 2007 | 230 | 90 | 320 |
| 2008 | 152 | 60 | 212 |
| 2009 | 138 | 54 | 192 |
| 2010 | 131 | 41 | 172 |
| 2011 | 130 | 73 | 203 |
| 2012 | 150 | 42 | 192 |
| 2013 | 166 | 34 | 200 |
| 2014 | 159 | 47 | 206 |
| 2015 | 101 | 30 | 131 |
| TOTAL | 1357 | 471 | 1828 |

Source: www.shell.com.ng/environment

Table 1. shows the oil spill data for nine years (2007–2015). The data indicates that 74% of the oil spill incidence from SPDC oil pipeline facilities are caused by oil pipeline sabotage and theft while 26% are caused by operational failures of the oil service companies and other factors..

Amnesty international (2009) reported that there is evidence to support the fact that an increasing number of oil spills are caused by vandalism or sabotage. The Agency however found evidence to substantiate community claim that equipment or operational failures and corrosion are sometimes wrongly designated as sabotage. The agency went on to cite the case of shell vs. Isaiah (1997) where shell claimed that the leak and spillage was caused by sabotage at the appeal court. In the land mark judgment, the learned judge ruled as follows:

the issue of sabotage raised by the defendant (SPDC) is neither here nor there... I am, having regard to the facts and circumstances of this case, convinced that the defense of sabotage was an afterthought". From the foregoing, there are indications that oil companies in Nigeria have used false claims of sabotage to avoid compensation payments.

NNPC (2016) records that of a total of 8,962 pipeline vandalisation incidents in the Niger Delta during the nine year research period of 2007-2015 only 48 or (0.53%) were due to rapture while the rest 8914 occurrences, or 99.47% were due to vandalism. Amnesty international (2009) reported that there is evidence to support the fact that an increasing number of oil spills are caused by vandalism or sabotage. However, amnesty international 2009 also found evidence to substantiate community claim that equipment or operational failures and corrosion are sometimes wrongly designated as sabotage. The case of shell vs. Isaiah (1997) where shell claimed that the leak and spillage was caused by sabotage at the appeal court is a handy evidence.

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2.5 Implications of oil pipeline vandalisation:

Human carnage is also one of the outcomes of oil pipeline vandalism. One thousand, six hundred and forty six persons were reported to have lost their lives in the growing oil pipeline explosions and fires resulting from vandalisation between 2003 and 2015 in the Niger Delta. See Table 2.

Table 2: 13-Year Pipeline Vandalism Explosion Death tolls in the Niger Delta (2003-2015)

| S/No | Date | Location | State | Death Loss |
|------|----------------------------|--------------------------|----------|--------------|
| 1 | 19 June 2003 | Onitcha Amiyi-Uhu (Ovim) | Abia | 125 |
| 2 | 17th Sept. 2004 | Mosimi | Lagos | 24 |
| 3 | 13 Jan 2006 | Iyeke | Edo | 7 |
| 4 | 12th May 2006 | Atlas Creek | Lagos | 150 |
| 5 | 26th Dec. 2006 | Abule Egba | Ondo | 500 |
| 6 | 16th May 2008 | Ijegun | Ondo | 100 |
| 7 | May 2010 | Amukpe, Near Sapele | Delta | 33 |
| 8 | 10 th July 2010 | Jesse | Delta | 250 |
| 9 | July 12,2012 | Okogbe | Rivers | 200 |
| 10 | October 1, 2012 | Osisioma, Aba | Abia | 15 |
| 11 | 5 th April 2013 | Edo | Edo | 36 |
| 13 | 27 th June 2013 | Atlas Cove | Lagos | 28 |
| 14 | 2013 | Arepo | Lagos | 7 |
| 15 | 1 st June 2015 | Onitsha | Anambara | 69 |
| 16 | 24 th Dec 2015 | Nnewi | Anambara | 100 |
| | TOTAL | | | 1,646 |

Sources : Adapted from Onuoha (2007); International Business Times (2015).

Death loss as an implication of oil pipeline vandalisation in the Niger delta is notable as shown in table 2. Several other losses are also attendant. The implication of this data is that there is the probability that the higher the incidence of oil pipeline vandalism, the higher the death loss and other attendant losses.

Data on the incidence of oil pipeline vandalisation (Table 3) shows that 49.73% of oil pipeline vandalisation incidence in Nigeria occurs in the Niger delta area alone. It can be argued that if the incidence of oil pipeline vandalisation drops, its effect on the oil producing communities such as death loss, and deprivation by the federal government and the MNOC's in the Niger Delta will drop ceteris paribus.

Table 3. 13-Year Oil Pipeline Vandalisation Incidence in the Niger Delta (2003 – 2015)

| Area | Year | | | | | | | | | | | | | Total | % of National |
|---------------|------|------|-------|-------|-------|-------|-------|------|-------|-------|------|------|------|--------|---------------|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | | |
| Port Harcourt | 608 | 396 | 1,017 | 2,091 | 1,631 | 557 | 382 | 141 | 336 | 393 | 616 | 269 | 917 | 9,381 | 31.94 |
| Warri | 90 | 241 | 769 | 662 | 306 | 745 | 280 | 161 | 548 | 495 | 315 | 378 | 236 | 5,226 | 17.79 |
| N/Delta | 698 | 637 | 1,786 | 2,753 | 1,937 | 1,302 | 662 | 302 | 884 | 884 | 929 | 646 | 1153 | 14,607 | 49.73 |
| Nigeria | 779 | 895 | 2,237 | 3,674 | 3,224 | 2,285 | 1,453 | 836 | 2,768 | 2,230 | 2505 | 3700 | 2783 | 29,369 | |

Source : Adapted from NNPC ASB 2015 – 1st Edition.

Table 4.: 13-Year Pipeline Fire Out-Break Incidences (2003-2015)

| Area | Year | | | | | | | | | | | | | Total |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | |
| Port Harcourt | 20 | 27 | 63 | 30 | 8 | 4 | 0 | 0 | 1 | 1 | 5 | 1 | 3 | 168 |
| Warri | 10 | 9 | 35 | 1 | 2 | 4 | 0 | 0 | 12 | 6 | 10 | 13 | 5 | 117 |
| N/Delta | 30 | 36 | 98 | 31 | 10 | 8 | 0 | 0 | 13 | 7 | 15 | 14 | 8 | 285 |
| Nigeria | 44 | 45 | 117 | 39 | 18 | 25 | 4 | 0 | 25 | 34 | 34 | 22 | 25 | 432 |

Source: NNPC ASB 2015 – 1st Edition

In Table 4, it is noted that 66 % of the 432 recorded oil pipeline fire outbreak incidences in Nigeria takes place within the Niger Delta alone.

2.6 Causes of Oil Pipeline Vandalisation:

Oil pipeline vandalism is not peculiar to Nigeria alone. According to Anifowoshe et al (2011), oil pipeline vandalism which is also called oil pipeline interdiction has at one time or another been reported in countries like Indonesia, USA, UK, Canada, Iran, Iraq, Russia, Columbia and Saudi Arabia. Several reasons have been deduced for this act of sabotage. Okoli and Orinya (2013) listed the following as causative and predisposing factors of oil pipeline vandalism: Inordinate ambition to amass wealth; Culture of criminal impunity and corruption in Nigeria; Poor policing/protection of oil pipelines; Political sabotages as in the case of Niger Delta militancy; Widespread poverty of the rural and urban-slum diversers, Scarcity of petroleum products; and flourishing petroleum product black market in Nigeria. Also, Onuoha (2008) in Etekpe and Okoli (2010) posited five factors responsible for the growing incidence of pipeline vandalization in the country as follows: the prevalence of poverty and unemployment in the region and country; the emergence of baron or godfathers who induce the vandalization; the defective security apparatus; the official negligence of MNOG's and Federal Government; and the weak legal framework.

But Etekpe and Okoli (2010) argues that the history of oil pipeline vandalization is traced to the general perception from being frustrated as the people are deprived from benefiting from the huge revenue source of the Niger Delta since 1956. Anifowoshe et al (2011) suggested that the high incidence of oil pipeline interdiction in the Niger Delta could be attributed to (a) long history of oil exploration dating back to 1903; (b) the chronology of some major oil spills; (c) indigenous claim of environmental degradation which gives rise to loss of means of community livelihood; (d) river pollution and death of aquatic lives due to oil spill; (e) Loss of farm crop yield due to groundwater pollution; (f) unfulfilled promises of social responsibility by oil companies and the government; (g) Loss of income.

The suggested reasons by Anifowoshe et al (2011) are in congruence with the arguments of Etekpe and Okoli (2010). In this landmark research, Anifowoshe et al (2011) concludes as follows.

To help reduce anger and frustration from indigenous peoples of oil bearing areas, their fair participation in the exploration, production, and transportation of oil and gas might be necessary. Such an approach in Nigeria may help to directly reduce levels of attacks on oil and gas infrastructure, and in addition to the current amnesty programme of the federal government.

The underlying reason why oil pipeline vandalization incidence in the Niger Delta has refused to be abated is the claim and conviction by the oil producing communities of deprivation of a collective resources (oil and gas) by the multinational oil companies and the federal government of Nigeria. This position is in tandem with the submission of Ceccato and Haining (2005) as cited in Anifowoshe et al (2011) who submitted that the presence of "collective resources" as with oil and gas led to higher rates vandalization in Sweden adding that this factor is responsible for the high incidence of pipeline vandalization in the Niger Delta. This deprivation is also the root cause of the conflict and militancy in the Niger Delta. This opinion is corroborated by Oyefusi (2007) Ibeanu (2000) Nwokolo (2009) and Oluwatuyi and Ileri (2013). Fred Brume (2006) defended this same thesis of deprivation of a collection resources as follows:

The cause of oil pipeline vandalization which started in the Niger Delta can be traced to the long history of neglect, marginalization, and repression of the people of Niger Delta by successive governments since the First Republic. The cumulative effect of all this has been the lack of development and widespread poverty, and discontent among the people of Niger Delta. The immediate cause of the growing vandalization is general discontent of the Niger Delta peoples, which has given rise to this unlawful method of recovering or scooping what is seen by many as their oil wealth that is being unfairly carted away to Abuja and other places, while they wallow in abject poverty and unemployment.

2.7 Theoretical framework:

This study adopts the "frustration-aggression theory (FAT)" propounded by John Dollard in 1939, but later substantially redefined by Leonard Berkowitz in 1969. Those who project this theory use the psychological theories of behavior and motivation to explain why people are involved in violent acts in spite of the law (Etekpe & Okolo, 2010). The thrust of this theory is the identification of the difference(s) between what people feel and want, i.e., the want-got rationale, and the expected need satisfaction, i.e., actual need satisfaction. According to Okolo (2004), where expectation does not meet actual need, the people are frustrated, and would confront those they perceive as responsible for their frustration. This is

where the effects of oil pipelines vandalization in the Niger Delta comes in. The people of the region have had high expectations from the MNOCs when oil and natural gas (ONG) were discovered at Oloibiri in the present Bayelsa State in 1956.

They were expecting, among other amenities, regular electricity supply, coastal road networks, efficient health care delivery system, sustainable community development, and gainful employment, etc. They are aware that MNOC's usually provides such amenities for their host communities in Europe, and expected same in the Niger Delta. This did not happen, and they protested, especially from 1980s, and later went underground to vandalize the oil pipelines as a way of expressing their frustration over the long years of neglect and underdevelopment (sabotage). The outcome of this sabotage involves the shortage or drop in the quantity of crude the nation is expected to generate annually, loss of lives, and environmental degradation etc. This means, the frustration is "induced" by MNOC's and the federal government. Thus, in applying the theory to the circumstances in the Niger Delta, Etekpe & Okolo (2010) have modified it to the, "induced-frustration-aggression theory (IFAT)". This is where Gurr's Relative deprivation thesis comes in. According to Gurr (1970) in his book 'Why Men rebel' "...the greater the dependency, however marginal, between what is sought and what seem attainable, the greater will be the chances that anger and violence will result.

2.8 Research Gaps:

Oil pipeline vandalisation is particularly widespread in Nigeria. Several authors such as Onuoha, (2008); Anifowose et al (2011); Etekpe & Okolo, (2010); Okoli & Orinya (2013); Eyo-Essien (2007); Oluwatuyi & Ileri (2013); and Brume (2006) have written on the various dimensions of oil pipeline vandalisation, but these studies have been more qualitative in nature. The above listed studies provided useful narrative discussions of incidents, causes and repercussions but have not applied quantitative research to establish the correlation between oil pipeline vandalisation, oil spills, incidence of oil pipeline fire explosion, and other variable in the oil host communities. None appears to have examined the oil host communities induced frustration-aggression in the face of the MNOC's who in partnership with the state are agents of exploitation. It is therefore the crux of the paper to make a paradigm shift from the military viewpoint of security which has failed woefully in the challenge of pipeline vandalisation and embrace the developmental cum welfarist approach to meet the expectations of the oil producing communities.

3. METHODS

3.1 Research Design:

In carrying out this study, the researcher adopted the 'Ex-post facto' (after the fact) research design. The design was adopted because it seeks to establish the factors that are associated with certain occurrence or type of behaviour by analysing past events of already existing condition. Here the researcher has no control over certain factors or variables as the events already exist or documented and can neither be manipulated or changed.

3.2 Method of Data Collection:

The data collection emanated from secondary data. The reliance on secondary data was essential as the researcher needed data covering several years for the analysis. Pre-formulated tables which are contemporary from oil producing and oil regulatory firms and institutions in the oil industry in the Niger Delta are obtained and systematically analyzed. Such firms and institutions include: Shell, NNPC, OPEC, National Bureau of Statistics (NBS), journals, and newspapers. The secondary data-Incidence of Pipeline Vandalisation, Explosion of fire Out-break, incidence of Oil spills, Volume and Value of Oil products Loss from various secondary data were analysed.

3.3 Validity and Reliability of Research Instruments:

The content and face validity of the research data (pre-formulated tables) was certified by standard and recognised bodies that operate and regulate the petroleum industries in Nigeria such as Shell, NNPC, The national Bureau of Statistics, OPEC etc. Being standard and world acclaimed bodies, their data are therefore deemed reliable.

3.4 Method of Data Analysis:

Since a statistic estimates a parameter, the parametric statistical procedures of t-test, Analysis of variance (ANOVA), and Pearson Product Moment Correlation Coefficient were used to ascertain the degree of association between quantitative

variables and normalcy of distribution of the population. The Ordinary Least Square statistical tool was employed in the study. The analyses were done in sections: Analysis of Descriptive Statistic and Analysis of Variance (R^2 , adjusted R^2 , and f-test). The analysis was done through the Statistical Package for Social Sciences (SPSS: Version 21).

3.5 Operationalization of Variables and Model Specifications:

Table 5 defines the various variables adopted in the study and also helped to understand how the variables are being operationalised

Table 5: Nomenclature or Symbolic representation of variables

| Labels | Variable names | Types of variables |
|------------|---|--|
| X_1 | Incidence of Oil Pipeline Vandalisation | Exogenous/Independent Variable/Regressor |
| X_2 | Incidence of fire explosion | Explanatory Variable |
| Y_1 | Death tolls | Responsive/Dependent Variable |
| ϵ | Error term/Residual | Unexplained Variable |
| B | Standard Beta Coefficient | Variability (Rate of change) |
| α | Intercept | Constant factors |

Source: Researcher's Compilation (2017)

4. DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation:

Table 6: 13-year Summary of Pipeline Vandalisation, Fire Explosion, Death Tolls (2003-2015)

| Date | X_1 | X_2 | Y_1 |
|-------|---------------|-------|-------|
| 2003 | 698 | 30 | 125 |
| 2004 | 637 | 36 | 24 |
| 2005 | 1786 | 98 | - |
| 2006 | 2753 | 31 | 657 |
| 2007 | 1937 | 10 | - |
| 2008 | 1302 | 8 | 100 |
| 2009 | 662 | 0 | - |
| 2010 | 302 | 0 | 283 |
| 2011 | 884 | 13 | 0 |
| 2012 | 888 | 22 | 110 |
| 2013 | 931 | 15 | 71 |
| 2014 | 647 | 14 | - |
| 2015 | 1,153 | 8 | 169 |
| Total | 14,580 | 285 | 1539 |

Source: Extracted from various secondary data (Tables 2-4)

4.2 Data Analysis:

4.2.1 Analysis of Research Question:

- What is the predictive strength of incidences of oil pipeline vandalism and fire explosion on death tolls in the Oil host communities of Niger Delta?

Table 7: Analysis of Variance

| Model | SS | Df | MS | F | R^2 | Adj. R^2 | P |
|------------|----------|----|---------|------|-------|------------|-------|
| Regression | 39142.21 | 2 | 3127.02 | .490 | 0.351 | .136 | <.423 |
| Residual | 26322.17 | 7 | 2049.27 | | | | |
| Total | 65464.38 | 9 | | | | | |

Source: SPSS Output

Table 7 shows that the independent variables (i.e. incidences of oil pipeline vandalism and fire explosion) were insignificant and did not jointly contribute to the variation in death tolls in the Niger delta at $P < 0.423$. The Adj $R^2 = 0.136$; implying that the independent variables jointly explained 13.6% variance in death tolls. Therefore, the incidences of oil pipeline vandalism and fire explosion were weak predictors of death tolls in the oil host communities of Niger Delta.

4.2.2 Test of Hypothesis:

H_0 : Incidences of oil pipeline vandalism and fire explosion have no significant positive effect on death tolls in the oil host communities of Niger Delta.

Decision Rule:

We reject the null hypothesis if p-calculated is greater or equals to 5% level of significance (i.e. p-calculated \geq p-value pre-set); otherwise, accept.

Table 8: Multiple Regression Analysis Showing the Relative Contributions of Each of the Exogenous to the prediction of death tolls in Niger Delta

| Model | B | STD. Error | Beta | T | P | Sig. | Rank |
|-------|------|------------|-------|-------|-------|------|------|
| Y_1 | .023 | .311 | | 1.203 | .241 | >.05 | |
| X_2 | .163 | .401 | .140 | .236 | 0.102 | >.05 | 1st |
| X_1 | .214 | .022 | -.132 | -.742 | 0.322 | >.05 | 2nd |

Source: SPSS Output

Interpretation:

Oil pipeline vandalism and fire explosion have no significant positive effect on death tolls in the oil host communities of Niger Delta. Available data and the model formulated showed a 0.163 and 0.214 variations on X_2 and X_1 respectively which lead to 0.023 partial effects on Y_1 . From the Table, the fitted model therefore is $Y_1 = \alpha_1 + X_1\beta_1 + X_2\beta_2 + \epsilon_1 \dots i$ is $\hat{Y}_1 = \alpha_1 + X_1(-0.163) + X_2(0.214) + \epsilon_1 \dots i$

5. FINDINGS AND DISCUSSION

The study revealed that the incidence of oil pipeline vandalism and pipeline fire explosion did not jointly contribute significantly to death toll in the host communities. The prevalence of pipeline vandalism hampers Nigeria's sustainable economic growth and development. The infrastructural damage, human carnage, economic loss, and sabotage associated with the oil pipeline vandalism are colossal, though avoidable. The study concluded that incidences of oil pipeline vandalism and fire explosion were not the main contributor to death toll in the Niger Delta.

6. RECOMMENDATIONS

- The incidences of pipeline vandalism and fire explosion in the Niger Delta should be given appropriate attention with the development of necessary initiative programmes that could help meet the needs of host communities.
- There should be increased cooperation between MNOC's and local communities towards ensuring eagle eye vigilance and proactiveness for greater pipeline surveillance.
- There should be increased affordability of petroleum products to make oil pipeline interdiction unattractive.

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