IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 28, Issue 2, Series 4 (February, 2023) 51-59
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Impact of Oil Pollution on Poverty Incidence in the Niger Delta, Nigeria: New Evidence

Abosede Pattie Ajayi-Temitope
Department of Minerals, Petroleum, Energy Economics and Law University of Ibadan, Ibadan, Nigeria

Abstract
More than two-thirds of the residents of the Niger Delta region of Nigeria are in absolute poverty. While this poverty incidence reflects the national average, many researchers have been worried of high poverty rates in the region. This is because the region is blessed with oil and gas, yet poverty is rife among the inhabitants. It is on this background that this study sought to uncover the impact of oil and gas pollution on poverty incidence in the oil-rich Niger Delta. To introduce a novelty, the study was anchored by a structural equation modelling (SEM) approach such that structural and measurement models were specified to describe the latent and observed variables. A simple random sampling technique was used to select 200 respondents from two states in the Niger Delta (Ondo and Delta). The respondents were asked to fill a self-designed questionnaire and data were analyzed using ordinary least squares. Findings revealed that oil spillage accounts for nearly 38% variation in mean incomes of the respondents; 22% in their health status and 23% in the number of years they have spent in school. Similarly, gas flaring is responsible for about 25% fluctuations in incomes of respondents; 23% in their health status and 15% in their mean educational attainment. The study concluded that oil pollution is the main factor dragging human development in the Niger Delta.

Keywords: Oil and gas pollution, poverty incidence, SEM, Niger Delta

---

Date of Submission: 01-02-2023 Date of Acceptance: 11-02-2023

I. Introduction

Before the 1970s boom in the oil and sector, Nigeria was the world's second-largest cocoa producer, with agriculture accounting for approximately 68% of GDP and 75% of exports (Oluyole, 2018). In the years 1975-78 alone, the cultivated agricultural surface declined by 60%. As a result, millions of Nigerians lost their livelihood (Thomas et al., 2022). In 1970, 19 million Nigerians were living below the poverty level. Today, when petroleum accounts for 95% of Nigeria's exports, the figure has increased to 123 million which is more than 60% of the general population (UNDP, 2022). The number of people living in poverty has increased nearly twice as quickly as population growth over the past three decades (Edoumiekumo et al., 2014). Okunmadewa et al. (2010) had noted that poverty in Nigeria primarily results from the detachment of the petroleum industry from the local economy. Nonetheless, about 95% of state petroleum income flows into the covers of the Nigerian government, whereas the local population in the oil-producing Niger Delta region gain insignificant share of the income (Oyinloye and Olamiju, 2013). In their comprehensive review of job creation in the Nigeria's oil sector, Adams et al. (2008) noted that the Nigerian petroleum industry creates only few jobs which are filled by highly qualified foreigners. This implies economic policies directed at championing the oil and gas industry will have disappointing consequences on the job creation potentials of Nigeria.

Oil spillage and gas flaring breed economic loss to farmers whose crops are exposed to chemical substances in the discharged crude oil or to acid rain from gas flaring, which is a harbinger of chlorosis, necrosis, and plant death. Brunekreef et al. (1997) showed that as seasonal ozone concentrations increase, crop yield decreases. But these concentrations are fuelled by gas flares. Ibaba (2001) added that Oloibiri is a shadow of its former self as farming which used to be the mainstay of the community's economy has been paralyzed with farmlands destroyed, fishing activities grounded and aquatic life virtually castrated by many years of oil prospecting and exploration. In another sense, Ibaba (2001) submitted that gas flaring breeds loss of revenue1, global warming and climate change via injection of carbon dioxide directly into the atmosphere.

1 "Nigeria loses $150billion to gas flare in 36 years, 1970-2006," *The Vanguard*, July 14 2008 (p. 8)

In their disparate studies, Okogun (2004), Kia (2009) and Ockuko (2011) claimed that several years of fossil fuel exploration by multinational corporations in the Niger Delta and the hazards of gas flaring and oil spillage which accompany it have degraded the environment of the region and left the petro-communities desolate. Not only have farming and fishing, the major occupations of these mostly riverine minorities been decimated, making poverty rife, their territories have continuously lacked basic infrastructure and amenities

such as electricity, roads, schools, hospitals, potable water, etc. Environmental degradation issues are of crucial concern to communities of the region as it is a major cause of productivity loses. There is then little surprise that dominant view by past researchers blames the oil production and its attendant consequences for the declining productivity and increasing poverty incidence in the region.

Osuntokun (2000) and Onosode (2000) also asserted that over the years, oil has sustained Nigeria's economic growth, improved the standard of living of other non-oil producing regions at the expense of the host communities whose natural resources are being exported abroad. Many Nigerian cities have been developed with the oil wealth while towns and villages in the Niger Delta have become eyesore today. In an attempt to update the literature using a novel methodology (structural equation modelling), this study investigated the impact of the oil and gas pollution on poverty incidences in the Niger Delta region.

II. Literature Review

Oyebamiji and Mba (2013) used questionnaires, focus group discussions and observation to evaluate the first of the Millennium Development Goals (eradicating extreme poverty and hunger) in the South-South region of Nigeria. Their findings showed that causes and effects of oil spillage are homogenous in all oil-producing states; poverty in the community is directly caused by oil spillage and indirectly caused by environmental degradation; the malnourished children are the worst-hit by poverty prevalence; the rate of youth unemployment is high and there is no evidence of food security in the communities. Thus, achieving millennium development goal one is still a mirage in the deepest south of Nigeria. Using similar but updated data, Elum et al. (2016) confirmed that oil exploitation has perpetuated food insecurity as a result of death of fish and crops as well as loss of farm lands and viable rivers for fishing activities leading to loss of livelihood.

Oil spills and gas flaring have destroyed fishing communities, reducing vital fishery resources and terrestrial vegetation and compromising the health of local people in and around oil installations. These were the findings of Uriagu (2011) who used participant observation to study the negative dimensions of oil and gas exploration in the Niger Delta. Uriagu (2011) further observed that people living around the creeks and villages in this region are made to drink oil-polluted water with the attendant health implications. Since the people's source of livelihood depends on aquaculture and farming, with the destruction of fishery resources and the terrestrial vegetation, the economic life of the people are at stake, which is why the area is bedecked with acute poverty and low life. In consequence, the inhabitants are often aggressive to the government and oil and gas workers (Uriagu, 2011). All these translate to huge economic burden and huge transaction, security and social costs to the Nigerian economy.

Esu and Dominic (2013) administered structured questionnaires and conducted interviews among 150 respondents, selected with multi-stage sampling technique, from three administrative districts of Ogbia Local Government Area of Bayelsa State. This qualitative research described oil as almost a curse, as over 70% of the respondents strongly agreed that oil production has negatively impacted on their well-being over time and poses serious effects on their livelihood. The respondents demonstrated large dislike for the presence of oil companies in their communities. Usang and Ikpeme (2015) obtained that the different activities of multinational oil companies have caused the oil-rich communities of the Niger Delta region to lose its ancestral homes and traditional sources of livelihood, blaming the worrying situation on pollution and extreme environmental degradation including serious damages caused by gas flaring, explosions and oil spillages from broken and leaking pipe lines which are left unrepaired by oil companies.

Nwajiaku-Dahou (2012) added that, in the Niger Delta, oil production and dredging have caused acid rain, fouled the air and the water, and caused widespread and dramatic erosion. Most oil communities have watched their lands erode away. Consequently, fishing and farming, the traditional occupations of these people, has not been viable. This situation has caused poverty, hunger and desperation among these peoples, who are struggling to eke out a living (Nwajiaku-Dahou, 2012). According to Anwana (2004), pollution of coastal corridors and wetlands is a recurrent disaster. Gas flaring has become a notorious pollutant of the local communities. Unfortunately there are no comprehensive compensation packages to mitigate the disturbing offshoots of oil exploration. This makes researchers, such as Bello and Olukolajo (2016), to counsel that in designing compensation packages towards solving resulting conflict from oil spillage in the Niger Delta, issues to be addressed include: inadequate legal framework, lack of clear channels of accessing claim, and inappropriate approach to valuation of damage.

Daniel-Kalio and Braide (2006) conducted a research on impact of fossil fuel exploration on crop yield. The paper revealed that there was about 100% loss in yield in all crops cultivated about 200 metres away from the Izombe gas flaring station, 45% loss of those about 600 metres away and about 10% loss in yield for crops about one kilometre away from the flare. Furthermore, Olisemauche and Avwerosuoghene (2015) examined the impact of gas flaring on agricultural production of Okpai in Delta State. Using stratified random sampling technique, 200 questionnaires were administered to elicit information on soil fertility, crop growth and crop productivity. Results showed that gas flaring reduces or lowers level of soil nutrient and fertility. Crop growth

and yield are affected negatively by gas flaring with plantain being the worst hit, worsening the rate of poverty in the area. This is consistent with the earlier findings of Alakpodia (2000); Olumide (2002); Achi (2003) and Ejuwa (2005).

Oil and mineral dependence have been linked with unusually high poverty rates (Emerole, 2008), poor health care (Cooper and Alley, 2002; Bhatia, 2009), high rates of child mortality (Akingbade, 2001; Nwilo and Badejo, 2005) and reduced expenditures on education and health2. In addition, oil dependence has been associated with poor educational performance, including low enrolment rates in primary schools and low rates of adult literacy (Okoko and Ibaba, 1999).

III. Methodology

This study was anchored by the structural equation modelling (SEM) technique. This was because the subject matter investigated involved the latent variables which could not be directly measured. This technique was therefore adopted so that the latent variables are represented by observed variables and thus the objectives of the study can be achieved. The SEM approach therefore proceeds with the structural and then the measurement models.

3.1. The structural and measurement models

The structural model involves only the latent variables which are oil and gas pollution and poverty incidence. There is no secondary time series or cross-community data on oil and gas pollution in Nigeria. Hence, such pollution cannot be directly measured in the oil-producing communities. Also, poverty data that are specific to the Niger Delta region are not available. In this regard, this study takes oil pollution and poverty incidence as the latent variables. Figure 1 presents the structural model.

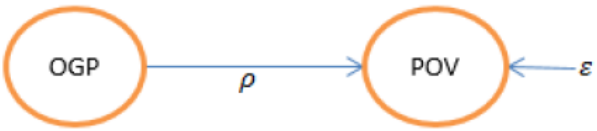

Figure 1: Path diagram of structural variables

Where OGP is oil and gas pollution, and POV is poverty. The arrow from OGP to POV shows the direction of influence – the oil and gas pollution influences the poverty incidence. The error term, ε, is normally distributed with zero mean and constant variances. In equation form, the structural model is presented as:

$$POV = \rho_1 + \rho_2 OGP + \varepsilon \ldots\ldots (1)$$

The measurement model, on the other hand, contains the variables that were measured directly by the researcher and were thus used as proxies for the latent variables. In this regard, oil pollution is indicated by oil spillage and gas glaring. While the actual oil spilled or gas flared was outside the reach of the researcher, the sampled respondents provided their lived experiences of scenarios of oil spillage and gas flaring. These were taken to represent the oil and gas pollution. We employed human development index as a guide to measuring poverty. So we obtained the average income per month and occupation, health profile and educational attainment. This approach of measuring poverty integrates both physical capital (measured by average income) and human capital (health and education). A household is considered poor if the mean response to the three measures is below 33%. The path diagram for the measurement model is therefore constructed as follows:

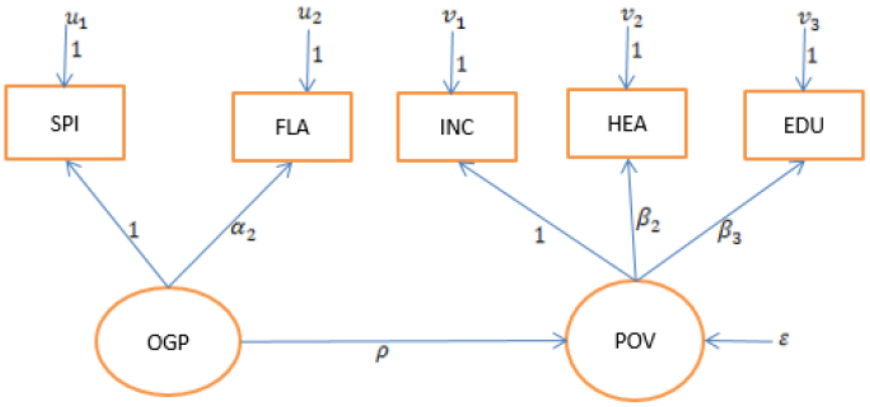

Figure 2: Path diagram of measurement variables

Where SPI is oil spillage and FLA is gas flaring. Measures of poverty are average income per month (INC), health profile (HEA) and educational qualification (EDU). The $\alpha's$ and $\beta's$ are measurement parameters while ρ is structural parameter. The $u's$ and $v's$ are measurement error terms while ε remains the structural error term. The constant term 1 that appears next to paths from measurement errors to indicators represent the assignment of a scale to each term; and the constant term 1 on the path running from a latent variable to an indicator sets the latent variable's scale to that of the observed variable. In equation form, the (regression) measurement model is constructed as:

$$\begin{pmatrix} INC \\ HEA \\ EDU \end{pmatrix} = \begin{pmatrix} 1 & \alpha_2 \\ 1 & \alpha_2 \\ 1 & \alpha_2 \end{pmatrix} \begin{pmatrix} SPI \\ FLA \end{pmatrix} + \begin{pmatrix} v_1 \\ v_2 \\ v_3 \end{pmatrix} \ldots\ldots (2)$$

3.2. Population and sample

While the population of the study comprised all people living in the Niger Delta region, a sample of 200 participants were however selected from two oil-rich communities in Ondo and Delta. A simple random sampling technique was used so that bias was minimized regarding those who could fill the questionnaires. Ondo and Delta states were selected due to the prevalence of oil-related violence and communal clashes there. Of the 200 sampled participants, a semi-structured interview was conducted among 50 participants in the study area. The interview process consolidated the information obtained on the survey.

3.3. Instrument administration and estimation technique

Questionnaires were the main source of data used in this study. The instrument contained three sections labelled A to C. Section A inquired the demographic information of the respondents including gender, marital status, age, number of children and years of living in the community. Section B asked questions on the respondents' awareness or degree of exposure to oil spillage and gas flaring in the selected oil-producing communities. Finally, Section C contained questions seeking information about income, health and education of respondents. The questionnaires were self-administered by the researcher and retrieved on the spot. This was facilitated by some locals engaged as ad-hoc field agents (gatekeepers). In other words, the use of educated indigenes of the community enhanced communication and reduced security risks given the emotional and political nature of the subject of interest and the study area. Pilot survey was conducted among 40 participants to establish validity and reliability properties of the instrument, which were found satisfactory. The collected data were turned quantitative and were presented in spreadsheets. The data were then analyzed using the OLS technique, and the results were discussed at 5% level of significance. The model's fit was also ascertained with tests such as chi-square, goodness-of-fit and badness-of-fit indexes

IV. Results And Discussion

4.1. Demographic features of respondents

More than half (56%) of the respondents are female while the remaining 44% are male. The distribution of respondents by gender was by chance, as no rule was applied to select more females than males.

Six in every 10 respondents were married. Of the remainder that are unmarried, 60% were single; 25% claimed they were divorced and others chose not to declare their marital status. The age-bracket with largest representation (71%) was 31-44 years. This was followed by those that were 30 years old or at least 18 years (15%). The elderly people that were at least 45 years old or young people that were less adult (less than 18 years) constituted about 10% and 4% of the sample, respectively. It therefore followed that the sample majorly consisted of inhabitants of the oil communities that were of official age of maturity. A critical analysis of the information supplied by respondents revealed that most people that were less than 31 years old claimed being single. It was therefore tempting to conclude that late marriage is popular among the people of the Niger Delta.

4.2. Awareness of respondents of oil spillage and gas flaring

When asked if they have ever been victim of oil spillage, 156 people representing 78% of total respondents answered in the affirmative. This put the study into context as majority of respondents were those that have been directly affected by oil spills. These respondents have been hit at least on three occasions on the average. Of the 22% who have not personally felt the impact of oil spillage, 92% claimed they have at least witnessed the occurrence of spills in at least three times as well. The meagre 8% of those with no direct exposure to damages of oil spills declined the notion that oil spillage is never a problem in the host community. It is therefore noteworthy that the participants in the study have direct or indirect exposure to the impact of oil spillage in their host community.

However the story is somewhat different regarding gas flaring. Only 48% of the respondents agreed that they have been victims of gas flaring. This number is biased to those living in Afiesere (75%) in Delta state compared to 25% in Ilaje in Ondo state. These victims have had at least two episodes of welfare-damaging impact of gas flaring. Of the 52% who were not directly open to gas flares, 88% have witnessed occurrence of gas flaring in their locality in at least three times. These sketchy findings therefore affirm the general intuition that oil spillage and gas flaring constitute a leakage to the flow of good living in the oil communities.

4.3 Human development measures of respondents

Income and occupation of respondents

The average income per month of the respondents was 17,000 naira. This was less than the prevailing minimum wage in Nigeria. Enquiries into what engages the respondents reveal that 81% of them are involved in agriculture, specifically into fishing (48%) and farming (33%). The balance of 29% is occupationally distributed across artisanship, civil service and business. More than 80% of the respondents answered that their occupation is affected very frequently by pollution from oil and gas activities, implying that the low income is related to exposure to unending oil spillage and gas flaring affecting the community.

Health profile of respondents

The respondents generally visit health facility in 2-3 times in a month. But it was revealed that 44% claimed the health facility is domiciled in the community while 56% went outside the community for medical treatment. Traditional medicine is common in the sampled community as about 50% of the respondents sought alternative healthcare from herbs and spiritual houses. 71% submitted that the illnesses that took them to hospitals are non-terminal, with 29% suffering from terminal illnesses. Only 45% of total sample agreed to suffer from diseases related to lung, kidney or heart, 55% complained of other illnesses such as malaria, cholera, diarrhea and appendix problems. In all, they admitted the illnesses are related to pollution coming from oil exploration in their communities.

Educational attainment of respondents

About 46% of the respondents did not go beyond primary school. 24% managed to complete secondary education. 14% were NCE/ND holders and 10% had bachelor's degree or HND. 6% had never stepped into classroom in their life. This is a reflection of poor educational developments in the visited oil communities. In response to the question inquiring the perceived reasons for such unsatisfactory educational outlook, about 4 in every 10 respondents (41%) blamed lack of school to attend in the community. Others blamed insufficient funding (31%), peer influence (13%), marriage/early pregnancy (12%) and no interest in schooling (3%). The public schools (primary and secondary) in the visited communities are at most five with four of them established in the 2000s. This lends credibility to opinions of respondents who claimed their inability to go to school was a result of lack of schools in their communities. The participants asserted that the public schools in their locality are too small to attend to the educational needs of their growing communities. When asked whether the unattractive educational attainment is related to oil and gas activities in the communities, they gave an affirmative response.

4.4. Correlations among the variables

We commence the confirmatory factor and regression analysis (the two pillars of SEM analysis) with examination of degree of associations between the variables. We take a two-dimension approach by separating the relationships between latent variables from observed variables.

Table 1: Correlations among latent variables

	OGP	POV
OGP	1	
POV	0.437	1

Source: Author's computation

Table 1 presents the correlation coefficients between the latent variables. It is noted that positive associations exist between the variables. This is pro-intuitive. Oil pollution positively co-moves with poverty, with a coefficient of 0.44. Although this association appears weak, findings in the regression analysis will bear out the level of impact that oil pollution has on poverty incidence.

The observed variables demonstrate similar patterns of relationships as the latent variables (Table 2). There exist direct relationships between all the variables. Judging from the association between SPI and FLA (0.814), it goes that both oil spillage and gas flaring are complementary. So areas of oil spillage are candidate areas of gas flaring as well. We also note that degree of relationship between oil spillage and income (0.657); between oil spillage and health (0.431) and between oil spillage and education (0.331) are instructive that scenarios of oil spillage can potentially influence the outcomes of human development in the Niger Delta. Gas flaring also correlates with these indicators except that the degrees of associations are below those of oil spillage. The positive associations among the explanatory variables are also noteworthy.

Table 2: Correlations among observed variables

	SPI	FLA	INC	HEA	EDU
SPI	1				
FLA	0.814	1			
INC	0.657	0.056	1		
HEA	0.431	0.369	0.442	1	
EDU	0.331	0.034	0.687	0.210	1

Source: Author's computation

4.5. Measurement parameters (endogenous variables)

The stylized facts above indicate that the inhabitants of the Niger Delta are characterized by low incomes, poor health status and low educational attainments. To generate more information about this, the structural regression analysis begins with measuring the influences that the components of HDI have on poverty. That is, are these components qualify to identify the poverty incidence in the Niger Delta? The results in Table 3 are revealing. INC accounts for more than 58% in the variation of poverty in the communities. It was gathered that the average income was 17, 000 naira and the median income was 17, 500 naira, both were less than the prevailing minimum wage in the country. HEA shares about 18% and EDU takes care of 22.5%. Given that 46% of the respondents do not have more than primary education and 6% never stepped into school, the regression results in Table 3 are less puzzling. Adopting the analytical framework of the United Nations Development Programme (UNDP), the human development index of the sampled respondents is estimated at 0.34. In short, the respondents scored poorly on the HDI index and this almost perfectly explains the poverty occurrence in the oil communities.

Table 3: Estimates of path coefficients for endogenous variables

Hypothesized relationship	Path coefficient	T-ratio
INC → POV	0.5883	7.2191*
HEA → POV	0.1751	1.8345**
EDU → POV	0.2247	5.2196*

Notes: → indicates direction of relationship.

* indicates significance at 5%. ** indicates significance at 10%

Source: Author's computation

4.6. Factor loadings: impact of oil pollution on poverty

The estimation procedure continues with measurement of the causative impact of oil pollution on poverty. These results are presented in Table 4. Oil spillage accounts for nearly 38% variation in mean incomes of the respondents; 22% in their health status and 23% in the number of years they have spent in school.

Table 4: Impact of oil pollution on poverty

Hypothesized relationship	Path coefficient	T-ratio
SPI → INC	0.38	7.89*
SPI → HEA	0.22	6.29*
SPI → EDU	0.23	1.82**
FLA → INC	0.25	2.01**
FLA → HEA	0.23	4.34**
FLA → EDU	0.15	4.78*

Notes: → indicates direction of relationship.

* indicates significance at 5%. ** indicates significance at 10%

Source: Author's computation

Low incomes of inhabitants who are predominantly farmers and fishermen are traceable to oil spillage. Spilled oil into farmlands and water resources is a drag on growth of incomes of these locals. Our finding is not so distant from that of Elum, Mopipi and Henri-Ukoha (2016) who confirm that oil spillage has perpetuated food insecurity in the Niger Deltan states as a result of incessant death of fish and crops as well as loss of farm lands and viable rivers. Further, oil spillage results in bad health outcomes and educational developments of the households. Usang and Ikpeme (2015) have earlier blamed health failures and lack of willingness to go to school among youths of Niger Delta on recurring episodes of oil spillage.

Similar trajectory holds for gas flaring exercise which is responsible for about 25% fluctuations in incomes of respondents; 23% in their health status and 15% in their mean educational attainment. Pollution of costal corridors and wetlands by flared gases has taken means of livelihood of the dwellers of oil-rich locations to be allergic to windfalls. Incomes of these people are low because gas flaring reduces their crop yields and disturbs growth of aquaculture activities in the areas. Some respondents shared how their market centres have been shifted from time to time due to flared gases. It therefore goes without saying that flared gases expose these people to health hazards, increasing their cost of healthcare. In the absence of government or oil company-sponsored health insurance, expenditure on health of the locals projects that they wallow in poverty for a long time until rescue measures are taken. Gas flaring also makes the respondents disinterested in education. The researcher observed an implicit apathy for schooling among the people in the visited communities: many school-age children were seen loitering around during school hours with no corrective measures from their parents. These findings corroborate those of Bello and Olukolajo (2016) and Olisemauche and Avwerosuoghene (2015).

4.7. Model's fit

Table 5 gives the results of the model's goodness of fit. Based on these results, we are able to conclude that the structural equation model is fitted into the data. The chi-square test talks about the exact-fit hypothesis (Kline, 2011). The test measures the odds that the population covariances do not differ largely from those predicted by the model. As remarked by Kline (2011), the resulting figure when the chi-square statistic is divided by the degrees of freedom should be less than 3.0 for the model to be a good fit. Table 5 declares that

our model is a good fit. As a general rule, the closer the figures of each of goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI) and normed fit index (NFI) to one, the better the fit. These indices all pass the fit test except NFI, though its value (0.887) is not markedly far from the threshold. The root mean square error of approximation (RMSEA) also supports the model's fit. The index measures the badness of fit such that zero implies best fit and values close to 0.1 reflects poorness of fit. In our model, the RMSEA is 0.07, so we have a structural model that is indicative of the data at hand.

Table 5: Indicators of goodness of fit

	Structural model	Recommended value
x^2/df	2.098	<3.0 (Kline, 2011)
GFI	0.892	>0.8 (Byrne, 1998)
AGFI	0.853	>0.8 (Byrne, 1998)
CFI	0.921	>0.9 (Hoyle, 2011)
NFI	0.887	>0.9 (Hoyle, 2011)
RMSEA	0.072	<0.1(Steiger, 2007)

Source: Author's computation

V. Conclusions

Recently, UNESCO estimates that more than 70% of the populations of the Niger Delta live below the poverty line. This has been termed a paradox by many scholars given that the region not only contributes more than 90% of statutory revenues of Nigeria but it is the richest in the country in terms of oil proceeds. This study has added to a pool of inquiries into the causes of lingering environmental paralysis and poverty in the Niger Delta region.

The Niger Delta predominantly consists of people with very limited education, who engage mainly with fishing and farming. These people have no other means of livelihood except crop yields from their farms and fishes from their rivers. They are not well concerned that oil is present in the communities. But what constitutes a concern to them is negative externalities coming from oil production. Oil pollution directly blocks their streams of incomes and indirectly adds to their illiteracy and exposes them to health setbacks. Crude oil contains chemical substances that are unwholesome to human body. But while trying to self-clean the mess of oil spills on their land or river, these people are vulnerable to water- and air-borne diseases. Gas flaring particularly pollutes the air and causes internal body organs to deteriorate.

This study concludes that human development index of the Niger Delta region is very low and poverty in the area seems to show no sign of disappearance in near future. And this is blamed on environmental destruction coming from fossil fuel exploration. Incomes of people living in the Niger Delta communities are trapped in low horizons. Their main sources of living have suffered huge blows since exploration of oil and gas commenced in their lands and waters. The locals of whom majority have been living in the communities since they were born did not finish primary school. Many of them blamed absence of schools to attend: establishing public schools in these areas is a recent phenomenon after the fourth republic. And because oil pollution has not made fishing or farming attractive any longer, they could not afford to sponsor themselves or even their children to fee-paying schools. Health hazards are also very rife. Many poor locals who could not afford to buy water for daily needs are forced to take the polluted water for cooking and washing. This explains that human development would have an abysmal outlook in the future of Niger Delta.

References

[1]. Bello, O.M. and Olukolajo, M.A. (2016). Adequate Compensation as a Tool for Conflict Resolution in Oil Polluted Wetlands of Niger Delta Region of Nigeria. Paper presented at the 3rd International Conference on African Development Issues

[2]. Brunekreef, B., Janssen, N.A., de Hartog, J., Harssema, H., Knape, M. and van Vliet, P. (1997). Air Pollution from Truck Traffic and Lung Function in Children Living Near Motorways. Epidemiology 8: 298-303

[3]. Daniel-Kalio, L.A. and Braide, S.A. (2006). Effect of Gas Flaring on Plants in a Tropical Fresh Water Swamp Forest in Nigeria. Ghana Journal of Science, 46: 3-11

[4]. Edoumiekumo, S.G., Karimo, T.M. and Tombofa, S.T. (2014). Income Poverty in Nigeria: Incidence, Gap, Severity and Correlates. American Journal of Humanities and Social Sciences, 2(1): 1-9

[5]. Elum, Z.A., Mopipi, K. and Henri-Ukoha, A. (2016) "Oil exploitation and its socioeconomic effects on the Niger Delta region of Nigeria" Environmental Science and Pollution Research International, 23(13)
[6]. Esu, B. and Dominic, O. (2013). Perceived effects of gas flaring on socioeconomic well-being of farming households in Ogbia local government area, Bayelsa state. American Journal of Research Communication, 1(3): 27-34
[7]. Ibaba, S. (2001). Understanding the Niger Delta Crisis. Port Harcourt: Jiral Publication Company
[8]. Nwajiaku-Dahou, K. (2012). The political economy of oil and "rebellion" in Nigeria's Niger Delta. Review of African Political Economy, 39(132), 295–313
[9]. Nwilo, P.C. and Badejo, O.T. (2008). Oil Dispersion and Trajectories on Nigerian Open Sea. The Conference Proceedings of the International Conference on the Nigeria State, Oil Industry and the Niger Delta, pp. 164 – 192
[10]. Ockuko, T. O. (2011). Gas Flaring, and Power Plant in Nigeria: Socio-Economic and Environmental Impact on the people of Niger Delta. M.A Thesis in Environmental Management, Bodo Graduate School of Business, Norway
[11]. Okoko, K. A. B., & Ibaba, I. S. (1999). Oil spillages and community disturbances: the SPDC and the Niger Delta experience. Journal of Oil and Politics, 2, 6-69
[12]. Okunmadewa, F., Olaniyan, O., Yusuf., S.A., Bankole, A.S., Oyeranti, O.A., Omonona, B.T. and Olayiwola, K. (2010). Poverty and Inequality among Rural Households in Nigeria' in: F.O. Ogwumike (ed.), Poverty and Inequality in Nigeria. African Economic Research Consortium (AERC) Nairobi, Kenya. Ibadan: Joycefitround Publishers, pp 37-77
[13]. Olisemauche, O.O. and Avwerosuoghene, O.P. (2015). The Effect of Gas Flaring on Agricultural Production of Okpai, Ndukwa East Local Government Area, Delta State, Nigeria. Standard Scientific Research and Essays, 3(9): 266-272
[14]. Oluyole, K.A. (2018). Competitiveness and Comparative Advantage of Cocoa Production in Southwestern: A Policy Analysis Approach. Universal Journal of Agricultural Research, 6(2): 57-61
[15]. Onosode, G. (2000). Environmental Management and Sustainable Development in the Niger Delta. In Osuntokun and Akinjide (eds) Environmental Problems of the Niger Delta. Lagos: Friedrich Ebert Foundation
[16]. Osuntokun, A. (2000). Environmental Problems of the Niger Delta. Lagos: Friedrich Ebert Foundation
[17]. Oyebamiji, M.A. and Mba, C.I. (2014). Effects of Oil Spillage on Community Development in the Niger Delta Region: Implications for the Eradication of Poverty and Hunger (Millennium Development Goal One) in Nigeria. World Journal of Social Science, 1(1)
[18]. Oyinloye, M.A. and Olamiju, O.I. (2013). An Assessment of the Physical Impact of Oil Spillage Using GIS and Remote Sensing Technologies: Empirical Evidence from Jesse Town, Delta State, Nigeria. British Journal of Arts and Social Sciences, 12(2) United Nations Development Programme (2022). 2022 Global Multidimensional Poverty Index (MPI): Unpacking deprivation bundles to reduce multidimensional poverty. New York. Available at: https://hdr.undp.org/system/files/documents/hdp-document/2022mpireportenpdf.pdf
[19]. Uriagu, J. N. (2011). Oil Industry and the Health of Communities in the Niger Delta of Nigeria. Encyclopedia of Environmental Health, 240-250
[20]. Usang, E.E. and Ikpeme, N.J. (2015). The Niger Delta Oil Rich Region: The Paradox of Fascination and Horror. Academic Journal of Interdisciplinary Studies, 4(1)

Abosede Pattie Ajayi-Temitope. "Impact of Oil Pollution on Poverty Incidence in the Niger Delta, Nigeria: New Evidence." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 28(2), 2023, pp. 51-59.